Number 6 *Whole*
Volume LII *November, 1943* *Number 312*

THE
PHILOSOPHICAL REVIEW

IS THE ANTITHESIS OF "MORAL MAN" AND "IMMORAL SOCIETY" TRUE?

A CONCEPTION frequently propounded is that moral philosophy or ethics deals with principles which the individual conscience affirms as constituting right or good conduct. Such principles, and conscience generally, being independent of collective life and empirical societies, moral philosophy calls upon us to return to our deeper self, to the intimacy of our inner life as contrasted with the externality of the social life, with its pressures and constraints. Thus the opposition between moral philosophy and sociology appears to be an opposition between two conflicting objects: "moral man and immoral society". One of the conclusions which can be derived from this conception (which admits of many nuances) is that the moralization of society, to the degree to which it may be possible, is only a question of applying the claims and ideals of individual conscience to concrete social situations. By this line of reasoning social ethics is reduced to politics. Obviously the best that sociology can do under these conditions is to collaborate in the search for means whereby to realize moral principles, but it has nothing to do with the principles themselves, the "ends".

When the same conception is applied in the field of sociology it takes a twofold form. Either it becomes pure social naturalism, which reduces the problems of sociology to those of mechanics, energetics, geography, demography, biology, psychology of subconsciousness, or external behavior; in all cases it thereby completely excludes the problem of moral control and regulation from the field of sociology. Or else it takes the form of the theory of the "mores", with a characteristic emphasis on the strong opposition of the rigid moral standards of diverse groups and societies to the ideal, critical and reflective morality of the individual conscience. The morality of groups or entire societies is considered as un-

consciously adopted, as inert, as directed toward uniformity, rigidity, conservatism, outward sanctions, as founded only on pressure and constraint. On the other hand, the morality of the individual conscience is considered as freely chosen, dynamic, progressive, creative, founded on "reason", "insight", or "aspirations" toward ideals.

Two different conclusions can be drawn from this alleged contrast. Either the morality studied by the sociologist has nothing in common with the morality studied by the philosophers, except the term, in which case each has to go its respective way. This has actually been the conclusion of many philosophers. Or else the critical morality of conscience has no validity; indeed to the degree to which it does not reflect and reproduce mores, it is pure imagination and phantasm. This is the conclusion of some sociologists, who go so far as to deny to moral philosophy even a proper subject matter.

In our effort to show the fallacy and the artificial character of the alleged antithesis between Moral Philosophy and the Sociology of Morality, as involving conflicting objects, we shall start with the analysis of sociological conceptions regarding group morality. We shall be then driven, step by step, more closely to philosophical problems, proving in a concrete way, that "without moral philosophy sociology of morality is blind, and that without sociology of morality moral philosophy is empty".

I. THE INCONSISTENCIES IN THE INTERPRETATION OF SOCIAL MORALITY AS "STATIC MORALITY OF PRESSURE"

W. G. Sumner writes in his well known work *Folkways* (1906): "Mores can make anything right and prevent condemnation of anything. . . . Morals can never be intuitive, they are historical, institutional. . . . Morals is an impossible and unreal category. It has no existence, and can have none" (3, 37, 29).

More recently Edward Westermarck, in his *Ethical Relativity* (1932), while emphasizing the emotional basis of "mores", as against the utilitarian assumptions of Sumner, nevertheless reaches the same conclusion as to the impossibility of moral philosophy: "Moral judgments, standards and values lack objective validity. The authority assigned to conscience is really an echo of the social

sanctions of conduct. Society is the school in which we learn to distinguish between right and wrong", and custom, the crystallization of collective emotions is the "headmaster" (50, 59, 109, 209).

However, many philosophers and sociologists were dissatisfied by the total separation of group morality as "static morality of pressure", studied in sociology, from the "morality of conscience as dynamic morality of aspiration"[1] or reason, studied in philosophy, and by the radical negation of the validity of moral philosophy. Accordingly they sought to arrive at some compromise between the two interpretations. In this way an eclectic view arose which aimed to demonstrate that the evolution of heteronomous group morality leads step by step to the autonomous and critical morality of individual conscience. Many examples of this conception could be quoted,[2] but it was expressed in its most typical form by the English thinker L. T. Hobhouse and then repeated with different nuances by a number of American writers. In his works *Morals in Evolution* (1905), and the later *Mind in Evolution* (1918), *The Rational Good* (1921), *The Elements of Social Justice* (1922), Hobhouse endeavored to show that the evolution of morality is "an ethical progress . . . to be found in the rationalization of the moral code, which as society advances, becomes more clearly thought out and more consistently and comprehensively applied" (30). Such rationalization implies the development of the selfconsciousness "of every man as a responsible agent". Thus the rationalization of morality is at the same time its individualization; but the latter is correlated with a more profound socialization of moral conscience, the personal responsibility of every individual linking him to others and indeed to the whole of society (612-637).

On this view rationalizing, individualizing, socializing, and moralizing tendencies are different aspects of the same growth of morality, which steadily progresses from heteronomous mores to

[1] See Bergson, *Les deux sources de Morale et de la Religion*, 1932, and for criticism my article "La Philosophie Sociale de Bergson", in *Renaissance* I (1943) 81-94, New York.

[2] For instance the first work of the French sociologist Durkheim *De la Division du Travail Social*, 1893, Engl. transl. 1915 and 1933, in which he tried to show that the evolution of society proceeds from "mechanical solidarity" or uniformity, in which the individual is dominated by society, to "organic solidarity" which is based on differentiation and permits ample expression to individual judgment, reason, and conscience.

personal autonomous morality. These formulations, reproduced in several outlines of Ethics[3] (in certain cases the authors share neither Hobhouse's spiritualistic rationalism nor his focussing of moral problems on the conflict between individual and society[4]), appear to us even more inconsistent than the radical oppositions between which they endeavored to compromise. Thus we will start our criticism from these eclectic conceptions and afterwards attempt to eliminate the opposition itself.

There are different types of inconsistency in this position; logical, and factual, historical. From the first point of view the following question immediately arises: How can the heteronomous mores of society be considered as "moral", if the criterion of the moral is found in the autonomous conviction or rational individual conscience? In what way can a continuous link be established between the "ethnical morality" of the starting point and the "ethical morality" which is the result of evolution? If both were not from the beginning in some secret way interpenetrated and did not have some common qualities, they could not be put together and develop one from the other. Moreover, on this theory the sociology of morality would apply exclusively to less civilized societies, whereas for civilized societies moral philosophy could alone claim validity, as if in modern societies and groups there were no processes of moral control to be studied by sociology!

These difficulties did not entirely escape Hobhouse and his followers. Thus he alluded to the fact that even the customary and traditional morality of uncivilized societies expresses "ideals" and that behind the rigid moral standards there is "the spirit in which they are conceived".[5] But if this is so, the question immediately arises whether the dichotomy between "mores" of society and "moral principles" of individual conscience is tenable; and furthermore whether the contrast is not so much between individual and collective morality, as between different levels of moral life, which may be more rigid or flexible in both societies and individuals alike. Finally, we shall perhaps discover that moral habits of

[3] See for instance William Kelley Wright, *General Introduction to Ethics*, 1931, pp. 65-69.
[4] See John Dewey and James Tufts, *Ethics*, revised edition 1932, pp. 7-10; 36-99.
[5] *Op. cit.* pp. 23, 365.

individuals are as real as moral customs of societies, and that the moral convictions and aspirations of groups and entire societies are as real as the moral convictions and aspirations of individuals.

But we have to return to a critical analysis of certain other aspects of the conception we are examining. Its affirmation of a continuous "moral progress" from heteronomous group morality to the autonomous morality of individual conscience, assumes in advance a precise and immutable criterion of morality, viz., reason, the producer of the parallel individualization and socialization of the individual mind. But what are the foundations of this criterion and in what way can its universal validity be justified? Is it not a dogmatization of a particular situation in the moral life, interpreted according to certain ideological traditions of the individualistic rationalism of the XVII and XVIII centuries? Can intelligence alone provide a moral criterion and lead to a grasp of moral values? Does reason produce the effects attributed to it? Does it always play the same role in moral life? This is denied by exponents of philosophical doctrines like Pascal's that the "heart has its own reasons, which the reason does not understand". This tradition starts with Saint Augustine, passes through the Scottish moralists of disinterested affections (Shaftesbury, Hutcheson) and altruistic sympathy (Hume, Adam Smith, Sutherland, and even A. Comte), to the protagonists of emotional intuition (Pascal, Rousseau, Scheler) and of activistic, volitional experience (J. G. Fichte, Maine de Biran, William James, Henri Bergson, Frederic Rauh).[6] Thus, far from the criterion of morality being indisputable it rather appears as subject to many doubts.

But even if the criterion proposed were selfevident, and if in general a universal criterion of this kind existed, it would still not follow that the actual moral life of societies moves in this direction. Such an assumption is contradicted by ethnographical, sociological, and historical knowledge, one of the most important aspects of contemporary social theory being the "downfall of evolutionism".[7] This involves above all the renunciation of the prejudice of an uninterrupted unilinear development of social in-

[6] See the analysis of these conceptions in my *Morale Théorique et Science des Moeurs*, Paris, 1937, pp. 37-88; 130-197.

[7] A. Goldenweiser, "Cultural Anthropology", 221 ff., in H. E. Barnes, *Prospects of Social Sciences*, 1928.

stitutions in favor of the discontinuity of differentiated types, each possessing its own peculiar complexity. The newer view precludes the rationalistic belief in a movement toward a stabilized moral ideal. The realization of the fact that every type of society, even the primitive, is a complex equilibrium among a multiplicity of different groups, each of which has its own moral standards, creeds, values, ideals, conflicting with others, excludes every monistic characterization of moral directions in every social change. For instance, in primitive society we have the struggle between the religious morality of taboo, corresponding to the clan, and the magical morality of labor under risks, of effort and aspiration, corresponding to fraternal association (brotherhoods) and secret societies. . . .[8] As for our present-day society, nobody will deny that we live "in the midst of a great battle of standards" and "that the bitterest struggles (of today) are oppositions of group's goods", controversies in which "good is opposed to good and duty to duty".[9] From this pluralistic view it obviously follows that in each group and each type of society there is a distinctive combination within the moral life of pressure and aspiration, custom and values, emotion and reason, intuition and reflection, and so on. For this reason all preconceived schemes of "moral evolution" are impossible. The celebrated historian W. E. H. Lecky exhibited profound historical penetration when he declared in his *History of European Morals* (1st ed. 1877, 2nd ed. 1905): "We may gain more than we lose; *but we always lose something. There are virtues which are continually dying away with advancing civilization and even the lowest stage possesses its distinctive excellence.*" "The moral type constituted by the order and prominence assigned to relative values, attached to particular virtues" is in "perpetual change" (I, 147, 149, 155, vii).

2. DEPTH-LEVELS IN SOCIAL AND INDIVIDUAL MORALITY

To arrive at the heart of the false opposition between ideals of individual conscience and social life, it seems to us convenient

[8] See on conflicts between religious morality and magical morality my article "Magic and Law" in *Social Research*, February 1942, pp. 104-122 and my Book *Essais de Sociologie*, Paris, 1938, pp. 173-276.

[9] See Henry Lanz, *In Quest of Morals*, 1941, pp. 2-4, and Wayne A.R. Leys, *Ethics and Social Policy*, 1941, pp. 250-268.

to start with an analysis of the so called "mores" or the pressure-morality of groups and societies. The character of "mores" as "patterns" or standards enjoying particular authority by virtue of repetition and endurance is wholly insufficient to distinguish them from other kinds of patterns which have no connection with moral life. Primarily they are purely technical patterns regulating everyday life and economic activity, for instance the manner of preparing certain dishes, the fashioning of particular kinds of tools and their utilization. These technical patterns are not related to ideals or to ideal values; they are "non-appreciative" patterns and are to be clearly distinguished from the "appreciative" ones,[10] *e.g.*, the moral, jural, religious, educational, aesthetic. The latter are penetrated with ideal values and in this sense they are *"symbolic cultural patterns"*, symbols related at once to ideals and to reality and *mediating* between both.[11] The irreducible contrasts between symbolic and non-symbolic, appreciative and non-appreciative, patterns cannot be circumvented either through appeals to customary routine and sanctions as Sumner does, or to emotions of approval or disapproval as in the case of Westermarck.

A technical, non-symbolic pattern does not become a symbolic and appreciative one through mere duration. Moreover, in all types of society the moral life is characterized as much by spontaneous innovations, collective creation, revolt and transformation, as by inertia and rigidity, their differing proportions depending upon concrete historical situations. Because the same sanctions may support different types of regulations one cannot arrive at an adequate characterization of the inner structure of the latter by any reference to sanctions. In fact, it would be more reasonable to inquire concerning the influence of the various symbolic patterns on the form of sanctions. Sumner himself could not entirely close his eyes to this difficulty; consequently he introduced into his definition of "mores" the aspect of "judgments on societal welfare" which certain folkways express (30, 59). In this way he inserted his own very disputable philosophical-utilitarian criterion to distinguish moral patterns from others.

[10] F. H. Giddings, *The Scientific Study of Human Society* (1924), 74 et seq., 143 et seq., 69 et seq., 264 et seq.

[11] See about symbols and symbolic patterns my exposition in *Sociology of Law* (New York 1942) 44-50; see also 22-30, 176-188, 304-309.

The emotions of approval and disapproval are related to all patterns, both appreciative and non-appreciative, symbolic and non-symbolic, as well as to all events of our life in general, our entire orientation in the world being from a certain point of view a combination of approvals and disapprovals. In order to find the specific character of moral patterns and customs, Westermarck was forced to contrast "disinterested and impartial emotions of approval and disapproval" with all others (pp. 89-113); but he did not succeed in explaining how this contrast arises and what is its foundation. He argued in a vicious circle, stating that the impartiality and disinterestedness of moral emotions results from their social genesis and connection with customs (pp. 109-11)! As if this were not also the case with all other standardized expressions of collective emotions, which have nothing to do with moral life.

Furthermore, all those who, like Sumner or Westermarck, deny objective validity to spiritual meanings, symbols, values, and ideals, which inspire moral customs, and seek their criterion in external repetition or in a subjective psychology detached from the contents of emotions, are unable to establish adequate distinctions among the moral, jural, religious educational, aesthetic usages. Such distinctions presuppose differentiations among ideal or spiritual values themselves, of which all symbolic patterns and appreciative usages (or mores having a normative sense) are simply the crystallized external expressions. They are moral usages as related to and inspired by moral values, jural usages as related to and inspired by jural values, religious usages as related to and inspired by religious ideals. In this sense "mores" is a confusing term which can have a meaning only when applied to a type of society in which the differentiation of values and corresponding regulations has not yet come about; and even for primitive society it is possible to speak only about a relatively low degree of differentiation. . . .

Even thoroughly positivistic sociologists, such as Littré, the follower of A. Comte, and, more recently, Albert Bayet, the follower of L. Levy-Bruhl, were forced to recognize this situation. Thus Littré differentiated between the "mores in a large sense of the term" and "mores in the strict sense" or specifically "*moral*

mores". And Bayet defined the subject of the sociology of morality as "the manifestation of the distinction between good and evil in social facts". These statements as well as several others by American theorists of social control, *e.g.*, Ross, Ellwood, and Cooley,[12] who construe morality as a specific variety of such control, based on certain values and ideals, are tantamount to a renunciation of the doctrine of mores and of what has been termed pressure-morality. This doctrine has shown itself quite unable to effect a differentiation between specifically moral patterns and other kinds of social regulations and patterns.

But if moral usages and patterns presuppose moral values and ideals, which they express, then the strong antithesis between the social morality of pressure and the individual morality of aspiration becomes questionable. In both we have aspirations toward ideals and values, as well as pressures of habits and customs; in both we have creativeness as well as inertia. For the sake of clarity we shall now describe briefly the different levels of collective and individual moral life and compare them.

Moral usages of groups and societies are customary collective behaviors according to standardized moral patterns. These two elements, behaviors and patterns related to moral values, do not always agree or correspond. The degrees of fulfilment of moral patterns through collective behavior are very different in various societies and groups and under different concrete circumstances. But collective behavior which does not fulfil standardized moral patterns is not necessarily immoral or amoral. This behavior may be inspired by non-standardized moral patterns or by moral symbols proper, such as ideal types of moral conduct, which transcend the general norms or prescriptions and are valued very highly. As the French scholar A. Bayet pointed out: "One of the most instructive aspects of social morality is the ideal type of collective conduct which a group or society formulated: for instance the warrior, sage, stoic, saint, gentleman, citizen, etc. The sublime collective virtues expressed in these terms are not prescribed as duty or obligation. The society proposes them to its members only as an acme of perfection, the achievement of which while attended

[12] See the analysis of their doctrines in my *Sociology of Law* (1942), 23-30.

with infinite difficulties, nevertheless transcends all other social merits."[13]

Collective moral behavior can also be inspired directly by moral values and ideals which are not expressed in patterns and symbols at all; in fact it may involve a revolt against such patterns and symbols and the formulation of new ones. Finally it may entail the apprehension and creation of new values and ideals; it may consist in real moral revolutions which often precede external revolutionary events.

Even the French sociologist Durkheim, who in general tended to exaggerate the role of customs and prescriptions in social morality, was forced to admit that: "Society can neither create nor recreate itself without at the same time creating ideals. This creation is not supplementary to the formation of the society; it is an act by which the latter makes and remakes itself periodically." "This is why sociological research has to take into account the creations of ideals. Collective ideals belong to its field of study, for indeed, from a certain aspect, society itself is a set of values and ideals."[14] The great American sociologist Charles H. Cooley was not less explicit on this subject. He considered the perpetual production of new values and ideals, by which the social life constantly transcends itself, to be the distinctive element of every society and group. "The social process is itself a rise of social ideals, a process of valuations"; "revolt against institutions" is as characteristic of the moral life of society, as the "ethos of the mores". In fact, even the latter express values and ideals. "It is a mistake to suppose that the person is in general better than society. Morally there are advantages on each side. A moral view which does not see the individual in living unity with social wholes is unreal." "Perhaps the greatest weakness of idealism is that it does not imagine living social wholes and their ideals."[15]

However neither Cooley nor Durkheim attained clarity about the main philosophical question: Whether the values or ideals implied in social morality are only products of social reality or

[13] Albert Bayet, *La Science des faits moraux* (1925) 20.
[14] E. Durkheim, *Les Formes Elémentaires de la Vie Religieuse* (1912) 604 (English transl., 1926); *Philosophie et Sociologie* (1924) 136, 141, 146.
[15] See C. H. Cooley, *Social Process* (1917) 283, 417, 420; *Social Organization* (1909) 13, 32, 320.

whether they are true spiritual elements having objective validity and are experienced only through group life. But the same question arises in regard to the ideals of individual conscience; the important point for us is the recognition by the quoted authors that the morality of aspiration, of values and ideals, of creativeness, is not less an aspect of collective moral life than of individual morality.

To sum up, we may say that "mores" as specific moral usages of societies imply underlying collective moral symbols, of which they are the crystallized standardizations; and that moral collective symbols imply basic collective moral values and ideals experienced by collective aspirations and volitions. Finally, that collective moral values and ideals imply a fundamental collective moral creativeness, the creative freedom of groups and societies. Thus the contrast between pressure and aspiration, routine and creativeness, is a characteristic of social morality itself; they are the terminal poles of both group and individual morality.

The moral life in all its manifestations is distinguished from jural, religious, aesthetic attitudes by its propulsive tendency toward the future, by a perpetual anticipation, by a constant revolt against all crystallizations and achievements of the past, which are regarded as obstacles to be transcended.[16] Hence in both collective and individual life, usages, standards, symbols, insofar as they are related to moral values, are only the solidified results of past creativeness, which must ever be transcended in new efforts. This does not exclude the possibility of variation in the effective role of static and dynamic elements in moral life within different types of societies and at different historical epochs. Thus, for instance, one can explain the relative rigidity of moral standards and usages in primitive society by reference to their connection with religious taboos. . . .

[16] See my description of "moral experience", collective as well as individual, in *Morale théorique et Science des Moeurs* (1937) 159-191 esp. 162: "L'expérience moral n'est qu'une perpétuelle révolte de l'esprit; révolte contre le présent au nom de l'avenir, révolte contre le réalisé au nom de ce qui est à réaliser, révolte contre les buts au nom des fins, révolte contre les lois de causalité au nom des impératifs, révolte contre les fins et les impératifs au nom des valeurs, révolte contre les valeurs au nom de la liberté créatrice. Les étapes de la réduction vers l'immédiat dans l'expérience morale sont donc des phases d'approfondissement de la révolte. L'expérience morale est révolutionnaire par excellence; c'est une révolution spirituelle toujours plus profonde, qui se moralise en se révolutionnant toujours davantage."

In examining the morality of individual conscience, we must state that here also there are not only aspirations toward ideals and creativeness, or, according to other interpretations, autonomous critical reason. In individual moral life too there are *crystallized moral habits* and *moral routine* guided by *static standards* and reinforced by repeated individual behavior. Here also there are rigid prescriptions, transcended by symbols proper, before we reach the direct aspirations toward values and ideals, and finally creative moral freedom. Unquestionably the moral habits of the individual exert inner pressures within his conscience upon his more profound moral aspirations. The different levels of profundity within the individual conscience are obviously in struggle with one another, each more static and superficial level of the moral self revealing itself as an obstacle to the affirmation of more dynamic and profound levels of the same self. In other words, in our individual moral life, and more generally in our individual consciousness, there are several conflicting "selves", and a series of pressures and revolts against them.

Under this aspect the revolt of individual moral conscience against the moral customs of society, or more broadly against "amoral" or "immoral society", can be more exactly interpreted as the revolt of one level of the self against another level of the same self; as the struggle, for example, of the self aspiring to moral values against the self committed to its moral habits, and so on. Indeed failure to compare on the same level is one of the reasons for the artificially constructed contrast between the morality of the individual conscience and social morality. The proponents of this contrast, instead of comparing the moral usages of society with the moral habits of the individual, social moral standards with individual moral standards, collective moral symbols, values, and moral creativeness with those of the individual, compare the most superficial level of social morality, *i.e.*, moral usages, with the most profound level of individual moral conscience, namely the creativeness of values and ideals. The outcome of this fallacy is to regard gradations present in both social and individual morality as contrasts between the two domains. Actually when we compare individual and social morality on the same level

of depth, we detect an impressive parallelism rather than a contrast. . . .

3. ANALYSIS OF SOME OBJECTIONS AGAINST THE AFFIRMATION OF A STRUCTURAL PARALLELISM IN SOCIAL AND INDIVIDUAL MORALITY

Various objections to such a conclusion of our analysis may perhaps have arisen in the mind of the reader and these we shall now proceed to examine. A: Is not the morality of individual conscience founded on *reflection* and *moral judgment,* these acts being absent from collective phenomena? B: In any case values and ideals of individual conscience can alone have objective validity and be true elements of the spiritual realm, whereas social values and ideals can be only projections of collective subjectivity, because only the individual consciousness is able to grasp the manifestations of the spirit. C: The apprehension of values and creation of ideals presuppose consciousness or mind, but these can be only individual. We shall shortly answer these objections.

Reflection, judgment, and finally intelligence, play a decisive role not so much in the moral life itself, not in direct moral experience, whether it be collective or individual, as in the *afterknowledge of it, after the moral acts have been done.* This afterknowledge, which has to be carefully distinguished from the moral life, may take different forms. It may correspond to moral philosophical doctrines, founded on theoretical judgments about the objectivity of moral values (these judgments are not to be confused with value-judgments), or to a sociological analysis of morality, based on judgments concerning moral facts. In both cases the judgments involved remain purely theoretical and are separated from direct moral life.[17] However, they can exert an indirect influence upon it, which may be observed in social morality not less, and perhaps even more, than in individual morality (*e.g.,* the influence of Christian moral doctrine on medieval society; or the influence of Rousseau's moral philosophy during and after the French Revolution).

The afterknowledge related to moral acts may also take the

[17] See my analysis in "Is Moral Philosophy a normative theory?", *The Journal of Philosophy,* March 18, 1943, pp. 141-148.

form of moral judgments in the strict sense of the word, that is, judgments concerning accomplished acts, in accordance with moral criteria. These judgments are more integrated in the moral life itself, but they never guide it, because they presuppose the criteria of estimation (moral standards, symbols, values, and so on) which are already given, and apply them only to a known fact of conduct, that is they combine reality-judgments with moral criteria. Moral judgments in this sense can depend on collective standards and values; they *can be collective moral judgments, no less than individual ones.* This does not deny the fact that the act of reflecting or judging can only be individual. As far as the more general role of intelligence or "reason", the intellectual functions of representation, memory, conceptualizing and intuition are concerned, they can be collective as well as individual. The denial of this leads to the other objection we have to examine.

This negation may refer to the capacity of the individual mind alone to apprehend data which "resist" consciousness and have objective validity. Here the term "reason" refers to the capacity of individual consciousness to transcend itself and grasp spiritual elements. This capacity is denied to collective mind, which is regarded as inferior to "reason", as "infra-conscious", as only instinctive, or at the best only *emotional.* Consequently it is only by supplementing collective instincts or emotions (for instance, impulsions and repulsions, sympathy and antipathy) with "individual reason", that we can succeed in grasping "ideal moral principles". This line of reasoning is based on two different assumptions, both very disputable. The first is the general thesis about the exclusive capacity of the individual mind to transcend itself in the direction of apprehending ideal-spiritual elements or participation in the spiritual realm. Such an assumption is due to the individualistic tradition which arbitrarily concentrates all values and capacities in the individuals. This may be opposed by the not less arbitrary universalistic conception, which concentrates all values and capacities in the social whole. The latter conception may be formulated in such way that only the wholes have "reason", *i.e.,* the capacity to apprehend and participate in the spiritual realm. But an impartial and unprejudiced view has to affirm here the *equivalence* of values and of capacities of the individuals and of the social wholes,

the individual mind and the collective mind being in an absolutely equal position with respect to the spiritual realm. Under certain conditions both may succeed in grasping particular aspects of it or in participating in it; and on the contrary both may fail in this or even turn away from it. . . .

The second assumption is the arbitrary identification of the apprehension of ideal principles with the function of the intellect, which leads to the unacceptable interpretation of all acts directed to objective validity or to the spiritual realm as "reason". On this view the feelings, affections and emotions are considered as "inferior" to intelligence, as entirely subjective, "blind", and lacking ideal validity. This prejudice against emotions, and more generally the non-intellectual functions of the mind, has a double source. On the one hand it derives from a *monistic prejudice,* which attributes an identical structure to all ideal principles and affirms the unity of the spiritual realm. It was profoundly shaken by the introduction of an irreducible contrast between *goodness* and *truth* (Pascal, the Scottish Moralists, Rousseau), and was destroyed by the modern conception of pluralism in the ideal principles themselves (starting with William James) as well as by the present-day value-theories, which treat of the struggle between logical meanings and values, as well as among different kinds of values.[18] On the other hand it follows from a prejudice that all ideal principles are immutable and universal, which is obviously impossible in the case of the particularized and variable contents of the emotions. But the combined efforts of American pragmatism, of the logic of relativity,[19] and of phenomenological philosophy, have tended toward the view that, without losing their objective validity, ideal principles (even logical) can be dynamic and relative to a particular set of conditions (which does not imply relativism). Under these conditions an impartial view has no reason to consider emotions as necessarily inferior when compared with intelligence, nor to

[18] See on value-theories my *Morale Théorique et Science des Moeurs* (1937) 88-125 and *Les tendances actuelles de la philosophie allemande* (1930, Paris) 76-152.

[19] See the very enlightening exposition of the "logic of relativity", as excluding relativism, in Henry Lanz *In quest of Morals* (1941) 25-83. See also my considerations about "relational character" of ideal values leading to the affirmation of their objective validity in my *Morale Théorique et Science des Moeurs* (1937) 104-144.

denominate with the confusing term of "reason" every state of mind which succeeds in grasping an aspect of the spiritual realm. . . .

There is the still more general question whether collective states and acts of mind (emotional as well as intellectual) are possible and particularly whether acts which experience values and create ideals are collective? In such a form the objections touch considerations of decisive importance for social and individual psychology, for sociology, and for philosophy and ethics as well. They must therefore be examined in some detail.

4. THE PROBLEM OF "CONSCIOUSNESS": "SELF", "ALTER EGO" AND "WE"

The conception of an individual consciousness separated from collective life, and opposed to it, is due to a subjectivistic view of consciousness as a closed circle, of which Leibniz' theory of the "monad without doors and windows", which produces all contents from within, is the most consistent interpretation. The superposition of a transcendent "collective consciousness" over individual consciousness introduced by some sociologists, notably by Durkheim, remains dependent to some extent on the same conception. In fact, the collective consciousness, separated from those of individuals, is no less a "closed consciousness" than the latter: only the consciousness of monads may be entirely isolated and transcended. . . .

The entire situation changes when one rejects the view of consciousness as a monadological entity and realizes with full consequence that spatial schemes such as "inner" and "outer", or images like circle or box, and so on, cannot at all be applied to mental life. The resultant interpretation of consciousness would emphasize its orientation to contents which do not come from it, that is as "intentional"[20] or partially intuitive. If it were necessary

[20] The theory of "intentional" consciousness was developed by E. Husserl and M. Scheler, founders of the "phenomenological school" in philosophy. See my comments *Les tendances actuelles de la Philosophie allemande* (1930) 130 ff., 43 ff. See also Marvin Farber. *Phenomenology as a method and as a philosophical discipline*, 1928; *Philosophical essays in memory of E. Husserl*, 1940, and the journal *Philosophy and Phenomenological Research* (1941-1942, passim). See also E. P. Welch. *The Philosophy of Edmund Husserl*, 1941. From a different direction various American neorealists (*e.g.*, R. B. Perry or W. P. Montague as well as the critical realists,

to cite an image, perhaps the most adequate one would be that of rays of light widening infinitely.

Such a conception, the only truly descriptive one, excludes all possibility of isolating consciousnesses. Constantly in process of "opening" and never being entirely "closed", they always *"communicate"* and "fuse" in a certain degree. They "communicate" through "signs" and "symbols" toward which they are directed. They partially "fuse" by direct "interpenetration", that is by participation in a union, without which the signs and symbols would not have a common validity. From this point of view "individual consciousness" and "collective consciousness" are only artificial terms employed for facility of expression. They are only two abstract views of the same concrete and indissoluble totality of conscious mental life. Strictly speaking, neither individual nor collective consciousness is possible alone. In other words, when an opposition is set up between individual and collective consciousness, we immediately have to realize that individual consciousnesses are immanent to collective consciousness and that collective consciousness is immanent to individual consciousness. This situation has been termed the *"reciprocity of perspectives"* between individual and collective minds (Litt).

Now to be more precise it is necessary to state that there are three poles in the indissoluble unity of the conscious mental life: *"Self"*, *"Alter Ego"*, and *"We"*. These are the "selves" which communicate with "alter egos" through signs and symbols, of which the foundation is the *"we"*—the partial fusion of the "selves" participating in their union. The direction of the conscious mental life towards "self" is considered as individual consciousness, the direction toward communication between "self" and "alter egos" as "inter-mental" process, and the direction toward "we" as "collective consciousness". In reality, however, the "self" cannot affirm itself without communicating with and opposing the "alter egos", and these communications and oppositions are impossible without a "we", which in turn presupposes a partial fusion of "self" and "alter egos". In this sense there is a constant

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e.g., A. O. Lovejoy and R. W. Sellars), and European intuitionists (*e.g.*, Henri Bergson and Nicolas Lossky) have arrived at the idea of the "open" consciousness, but have sometimes exaggerated its "sterility".

interplay and tension between "we", "self", and "alter ego", which constitute consciousness itself. Collective psychology, intermental psychology, and individual psychology, start from three different poles of conscious mental life; but, so far as they give true descriptions, they finally come to the same concrete totality of mental life. However as far as the infra-conscious and unconscious psychic life (for example, instinct) is concerned, individual psychology has its own field, connected with the physiology of the human body; and in this way we can see the entire measure of the mistake made by those who tried to confine social psychology to a theory of individual instincts adapted to social environment (MacDougall), or to the subconscious depths leading to the primitive (Freud). Actually these instincts, so far as they are taken as acts and not as contents of these acts, are the elements most disconnected from social life. . . .

After this first explanation, we will easily understand why the thesis of the "reciprocity of perspectives" or of the structural parallelism between individual and collective mental life is now gaining more and more supporters. Cooley, Mead, Dewey, Boodin, in America,[21] Theodor Litt and to some extent Max Scheler, in Germany,[22] and many modern French sociologists,[23] are all in agreement on this point. We may quote, for instance, such statements as that of Cooley according to whom "self" and society are "twin-born" (*Social Organization* 350), or that of Dewey according to whom "both words, individual and social, are hopelessly ambiguous, an ambiguity which will never cease as long as we think in terms of an antithesis", in obliviousness of the fact that "an individual as a member of different groups may be divided

[21] For Cooley, Mead, and Dewey see quotations in the text; see also J. E. Boodin *The Social Mind*, 1939, passim; E. Farris *The Nature of Human Nature* (1937) 155 and following; F. Brown, *Psychology and Social Order* (1936) 77, 280 ff., 299-300.

[22] T. Litt, *Individuum and Gemeinschaft*, 3rd ed., 1926: Max Scheler, *Wesen und Formen der Sympathie*, 2nd ed., 1923: *Soziologie des Wissens*, 1924: in the *Formalismus in der Ethik* (1916 1st ed.) 1927, 540-586, the reciprocity of perspectives is obstructed by Scheler's very disputable theory of "Gesamtperson".

[23] M. Mauss *"Psychologie et Sociologie"* in the *Journal de Psychologie*, 1924, pp. 899-922 and M. Halbwachs, *Les Causes du Suicide* (1930) 12 ff., 405 ff., 449 ff., leaned strongly toward this point of view, abandoning the Durkheim conception of the "transcendence of collective consciousness". In my book *Essais de Sociologie*, 1938 (Spanish transl., Buenos Aires, 1942), pp. 20-169, I tried to develop the thesis of "the reciprocity of perspectives" in detail.

within himself and in a true sense have conflicting selves" (*The Symbolic and its Problems* (1927) 186, 191, 13). One must recall also the most explicit formulation of Mead, who conceives mind and consciousness as a process of "participation of Self and others in the social" (especially through symbols) and vice versa. For him "self and the others are relative to the perspective of society" and the latter relative to the perspective of the former; so that "neither the individual nor the society can be explained in terms of the other, except as the other is explained by it" (See *Self, Mind and Society* (1934) 7, 112, 196, 22-226; *The Philosophy of the Act* (1938) 152-153 and passim). Finally there is the view of Marcel Mauss "that the psychology of the total man and the psychology of the society taken in its totality" are different aspects of the same psychology.

In order to concretize and illustrate these dicta, let us take an example. As we pointed out, individual mind and collective mind have to be compared on the same level of depth: habits to custom, inner pressures to social pressures, personal-aspirations to group-aspirations. Then, for instance, there will correspond to the three degrees of the intensity of the we's fusion (*viz.* Masses, Community, and Communion), three depth-levels of the "self". There will be the superficial "self" of the individual, participating in Masses, the more profound "self", participating in Community, and the most profound "self" participating in Communion. Each of these more superficial "selves" and "we" will exercise pressure upon the more profound ones.[24]

5. EQUIVALENT CAPACITY FOR MORAL LIFE OF GROUPS AND INDIVIDUALS

If all this be true, it is no more difficult to recognize collective states and acts of mind, especially acts experiencing moral values and creating ideals, than to recognize individual states and acts of mind. They are to be considered on the same level; in them they reveal themselves in a position of structural parallelism.

It is true that the intensity and role of these levels may be different in the individual and the collective moral life, depending

[24] See on this subject my article: "Mass, Community, Communion" in *The Journal of Philosophy*, August 28, 1941, pp. 485-496, and my book *Essais de Sociologie*, 1938, passim.

on times and circumstances. It may happen that in the moral life of society the superficial level of the "we" predominates in fact, whereas in the moral life of the individual a profound level of the "self" predominates, and vice versa. Under such circumstances we speak of "conflicts" between social and individual morality and we state that one is "richer" or "more creative" than the other. But it is a question of fact, which has to be studied by the science of sociology. There may be types of moral life in which the intensity of aspiration and creativeness is greater in collective life than in individual life, which may be more dominated by habits and inner pressures, as for example during revolutions and reforms; again, there may be contrasting types, as in primitive societies, for which the opposite is true. No general conclusions can be drawn from these facts, because the *virtual* capacity for moral life in all its levels appears to be the same in individuals, groups, and entire societies.

GEORGES GURVITCH

RUTGERS UNIVERSITY, A.S.T.P.
DIRECTOR OF THE FRENCH SOCIOLOGICAL INSTITUTE
(ECOLE LIBRE DES HAUTES ETUDES, NEW YORK)

ETHICAL OBJECTIVITY THROUGH SCIENCE

I

THERE is clearly one basic assumption, and only one, at the root of the refusal to admit that science can be employed as a method of establishing objective ethical judgments. This is the assumption that science is necessarily neutral on moral questions; that it can only deal with the *is* and not with the *ought* of things. We shall try to show that this assumption is highly dubious. Our procedure will involve direct criticism of the assumption, but it will rest primarily upon the development of an alternative interpretation of science which affords a logical structure for a relativistic but objectively founded ethics.

There is not space here to go into all of the interesting reasons why it was taken for granted that experimental science cannot treat ethical questions. But a few of them are particularly relevant to our task. One of them is the traditional assumption that ethical objectivity must have an *absolute* foundation. It has been assumed that if moral judgments are relative they are necessarily subjective or mere matters of taste and opinion. The potency of this assumption is illustrated by the fact that the great pioneers (*e.g.*, Westermarck and Sumner) who revealed the cultural relativity of concrete moral judgments accepted without question the further belief that therefore they are subjective and without any trustworthy foundation whatsoever. It would surely be foolish for an engineer to proceed to erect a structure at some location through pure faith that a rock foundation would be there where previous surveys revealed that there is none. But we now know that it might be equally foolish for him to refuse to supply a floating foundation merely because of his love of solid rock.

For two or more centuries after the advent of experimental science it was generally assumed that science, also, is a search for absolute truth. Where this was the case many of the philosophers and social theorists (*e.g.*, Locke and Mill) did not despair of using science for ethical questions. But without exception in these cases, as far as I know, experimentation was not taken to be the essential characteristic of science, but rather its severely rigid, if not mathematical, deductive procedure.[1] For where experimentation is treated

[1] A beautiful exception to this claim, at least one moving in that direction, is Hume.

as essential, not as a mere crutch to aid deduction and direct observation, the method of science is seen to be thoroughly relative. Indeed, many interpreters (including Engels and Lenin) who accepted the view that science is a search for absolute truth freely admitted that the actual growth of knowledge is asymptotic and never quite reaches its absolute goal.

Within the past century, however, especially since the time of Darwin, there has been a growing tendency to treat science as a relativistic method. It is ironical that many of the most vociferous of the supernaturalists today urge this as one reason why science cannot possibly be employed on ethical questions. This trend is of crucial practical significance. For if, "in spite of" its thorough relativism, experimentalism can achieve the devastating objectivity it has attained in our technological age, then there may well be hope for an objective relativism in regard to moral questions.

II

If we survey the development of modern science concretely, we find no evidence at all for the belief that it is a search for absolute truth. In any experimental science it is necessary to distinguish two kinds of material with which it works. One is its abstractions such as atoms, vortices, mathematical equations and "laws", electrons, neutrons, spacetime geodesics, etc. The other kind is its concrete material such as levers, pulleys, inclined planes, complex engines, motors, generators, atom-smashers, gases, liquids, metals, etc. Practically all of the serious objections which have been urged against the use of science for handling normative ethical questions confuse these two kinds of material, and for the most part identify science with its abstractions.

It has been urged, for example, that, since science is quantitative whereas moral questions are qualitative, the two are incompatible. But an obvious presupposition is required to reach this conclusion. It is that quantity and quality are separate categories. This assumption is so absurd concretely that it could never be accepted unless science were identified exclusively with its abstractions. For concretely qualities and quantities are practically always experienced together.

Furthermore, the degree of numerical precision achieved in sci-

ence is always relative to both kinds of material. All scientists recognize the absurdity of making concrete measurements so refined as to be beyond the point of precision required by the abstract instruments available. They also recognize the absurdity of carrying out the decimal farther in the abstract material than the degree of refinement of concrete measurements requires. Numerical precision, like objectivity and experimental control, is the product of experimentation rather than its antecedent. On the ground of the qualitative-quantitative disjunction, Darwin might well have been deterred from his great undertaking. For the degree (the apparent perfection) of Newtonian numerical precision in physics had hardly anything in common with the biological material of Darwin's day. Presently we shall cite an example of a morally concerned experimental enterprise which illustrates that for our proposed venture we have much more to go on than Darwin had for his.

It need hardly be said that the more rapidly science develops, the more rapidly these abstract and concrete materials change. Perhaps we can see how they change by stating the operating aims in the scientific venture. The experimental scientist accepts in practice those abstract laws or entities which best promote the development of concrete transformations. This is graphically illustrated by the fact that from among incompatible geometric systems the experimenter chooses those which best promote his concrete task of achieving control. Furthermore, the formula H_2O, for example, taken operationally, means that certain relative amounts of hydrogen and oxygen can be transformed into water, and conversely. As a moment of the entire abstract framework of chemistry, it and other abstract formulas relate water to innumerable other concrete realities containing hydrogen and oxygen in definite ways by stipulating operations for controlling transformations among them.

Accordingly, if we accept experimentation as essential, we shall say that the aim of science is to develop abstract instruments for improving and increasing our control of concrete transformations. The so-called "pure" scientist is aiming primarily to produce better instruments. His concern is not primarily with their technological uses. This is the task of the engineer (and the physician). In so far as

the interest of the scientist is "pure", in so far as he aims *merely* at "truth for its own sake", his concern is for the improvement of the abstract instruments of control for the sake of improving the abstract instruments of control for the sake . . . etc.

Introducing certain modifications among them, the engineer takes over these abstract instruments produced by science and puts them to use. Unfortunately, however, engineering suffers from a disease which bears a close family resemblance to that of science considered in its pristine purity. The critics of pragmatism have persistently, if somewhat irrelevantly, reminded us that *usability* presupposes satisfactory ends or aims for which to use the instruments in question. But no one will argue today that the ends for which science is used are in a satisfactory state of affairs. Indeed, it is the intensification of the costliness of the conflict among ends which has put science on its recent defensive against the supernaturalists. Is there a way out of this practical dilemma in which science and engineering, and therefore the rest of the world, now find themselves?

III

Before we try to answer this question we can make use of our operational analysis of the aim of science to examine another objection to the very attempt to combine morality and scientific method. It has been argued that the two are incompatible because morality is teleological whereas science is efficient or mechanistic. This fallacious argument affords another interesting illustration of the confusion of abstract and concrete materials. For the concrete material of any science is permeated with human purposes. Furthermore, the efficient causal relations, which obtain within the abstract material, the atoms, electrons, etc., are the inevitable outcome of a human purpose; the scientific purpose, namely, of improving the abstract instruments of control. No vitalist to date has suggested a way of instituting a transformation by starting the operation upon the final outcome of the transformation. As long as the basic test of scientific ideas remains the control of concrete transformations, it is difficult to see how the abstract instruments of control can be other than mechanical. For the only way we know to date of instituting a concrete transformation is through

operations performed upon the initial material, not upon the final material which will be in existence only as the transformation comes to a close.

However, only the blind persistence of the epistemological and psychological dualism initiated by Descartes could lead us to permit this necessity for efficient relations within the abstract material of science to cause our thinking to separate human purposes out of the concrete material of experience into some kind of a non-physical, psychic or spiritual substance. Had Darwin acted upon such a confusion of abstract and concrete materials he could hardly have attempted to expand science into the concrete material of animals and human beings. For certainly this material is intimately permeated with purposes, and according to many scientists at the time it was also permeated by divine purposes.

IV

Let us now turn to the question of the logical structure of an ethically concerned experimental procedure. The scientist, as we have observed, aims to improve the instruments of control. His basic test is the improvement of concrete transformations. But his interest is primarily in the instruments, not in the control. Thus he aims to improve the instruments of experimental inquiry for the sake of improving them as instruments of inquiry. In other words, experimental science can be defined as *selfcorrective inquiry*, where the term *self* refers not to the scientist but to the abstract, instrumental material of science.

But let us suppose for a moment that the experimental method is not necessarily ethically neutral, and that ethical objectivity can conceivably be established on a relativistic foundation. On the basis of these assumptions we can see a possible scientific cure for the puristic disease in both science and engineering. What we, the engineer, and the scientist need is a method of selfcorrective inquiry into aims. Aims are among the concrete realities of experience along with rocks, hydrogen, and high explosives. They are more or less haphazardly *formulated* by human beings. But any human being who is concerned with the aims of life tries to formulate them as best he can. To this end he tries to use the best instruments he can find. If we could establish a going concern

which is controlled by the aim of improving the instruments for the formulation of aims, we should have a selfcorrective approach to the problem of moral conflict.

Let us try to make this abstract sketch more specific. An aim is a plan of action. Science has given us powerful instruments for achieving certain ends. But it has not concerned itself with the problem of the conflicts among our aims. For this problem is a social-ethical matter.

But if we disregard certain traditional taboos about science and ethics, we may choose to treat a plan or aim as a scientific hypothesis to be put to work for achieving certain concrete transformations within society. We may formulate these plans as best we can by using whatever abstract instruments are available from social psychology, economics, biology, practical experience, and so on. In principle this is what any intelligent practical administrator does.

However, our interest in a selfcorrective method is not *merely* practical. We are concerned to improve the instruments of planning. Accordingly, no plan, however successful practically, can be considered completely satisfactory unless it tends in the long run to improve the instruments of planning. These instruments constitute the abstract material of *experimental* but ethically concerned social science or engineering.

The first things that a plan bumps into when it is set to work are human interests, resistances, dissatisfactions. Try to tell any administrator that these things are "merely subjective"! They are the real, concrete material of social planning. Accordingly, they afford a real, objective basis for testing and improving the instruments for the *deliberate* formulation of aims. They afford an opportunity for *achieving* objectivity in our moral evaluations. Science had to win objectivity in regard to beliefs about nature. Objective natural realities existed to serve as tests of belief and judgment, but the latter were shaped into an objective affair by the development of science. Experimental ethics, likewise, need not *presuppose* objectivity of judgment; it must set out to find it by proper use of the objective realities with which ethical belief is concerned. What the method does presuppose is an interest in achieving human satisfactions. It frankly recognizes no way of *demonstrating* that one

ought to take such an interest. If this is called a "subjectivistic" acknowledgment, it does not matter, since in any case only those who are interested in the human scene will make an effort to achieve the kind of objectivity which is available. To a person who really rejects the method of science there is no way of demonstrating that science is the road to dependable beliefs even about nature.

V

To make this attempt at dependable moral beliefs, however, we must be willing to accept a "dual" aim. We must aim to produce practical plans which will also serve to test the instruments of planning which constitute our abstract material. This means that we must be willing to sacrifice the traditional, "delightful" separation of scientific theory from practice. There is no practical reason for not doing so. The natural sciences had to overcome many practical obstacles in their development. Furthermore, it does not matter logically how much the pressure of practical exigencies compels us to subordinate the aim at selfcorrection to merely practical matters, as long as the former is not extinguished. For in so far as it operates successfully, however slowly, growth is attained; and a selfcorrective society is under way.

As we learn experimentally about human satisfactions, interests, aims, and dissatisfactions, our means of testing the abstract planning material are improving. The test of improvement here is the actual achievement of *better* satisfactions; *i.e.*, the more satisfactory resolution of conflicts. The improved instruments could, of course, be employed to transform satisfactions into *lesser* satisfactions. Logically any instrument is ethically neutral. But the important logical and ethical point is this. They cannot be intended for negative use as long as the aim includes the improvement of the instruments themselves. For in this case the objective test is sacrificed, and there would be no criterion for *improved* instruments. It is a gracious irony which turns the immoral principle of "pure" science considered in detachment from practice into a positive moral principle when science as selfcorrective inquiry is redefined to include practice. The practical basis of this interesting logical requirement can be clearly seen when we observe that to aim at a dissatisfying plan is to aim to wreck the plan.

In general terms under present social conditions the basic problem should perhaps be formulated in negative terms as follows: The improvement of instruments and techniques for the *less unsatisfactory* or *less costly* resolution of conflicts among aims. But at a certain point in the development of the method it can become capable of a positive formulation as follows: The improvement of instruments and techniques for the *more satisfactory* or *more enriching* resolution of conflicts among aims. When this transformation occurs the fact of conflict and diversity among human interests will have become an undisguised blessing, just as in the natural sciences the clashes among theories, hypotheses, "laws", and facts have become occasions for improving our control over nature.

VI

In one important sense of the term the natural sciences are ethically neutral in a way in which experimental social science cannot be. In the immediate test of an hypothesis in physics the consequences of the hypothesis upon human interests are irrelevant to that particular test of that hypothesis. If in investigating the structure of the atomic nucleus the scientist is likely to become sterile, that consequence is irrelevant to the test he is performing. But the illustration is apt. For it is readily conceivable that investigation of these physiological consequences would throw some light on the atomic nucleus.

Likewise, the experimental investigation of the conflict of aims, which is part of the consequences of scientific findings, may throw considerable light on actual physical and chemical transformations. In any case the distinction between the natural sciences and experimental social science should not be allowed to separate the two types of inquiry. For even if chemistry and physics can continue to prosper as selfcorrective enterprises without a concern for their ethical consequences (and the advent of fascism illustrates that this is highly dubious), certainly experimental social science cannot get under way without using the natural sciences. In a technological world no human plan can avoid technological difficulties and problems which can only be solved by engineering and science.

Fortunately, in the United States (and perhaps in the Soviet

Union also) there is more than a bare logical scheme of selfcorrective social-ethical inquiry to go on. The amazing success of the TVA labor-relations policy indicates that our extensive talk is not mere theory.[2] A labor mediator who is concerned to settle conflicts in the most satisfactory way and who uses as part of his criteria of success the improvement of the instruments of mediation is an experimental social scientist. An enterprise which adopts such a procedure of mediation of conflicts is an experimental enterprise. As it extends this method to conflicts among citizen interests generally, it is expanding the area of social inquiry.

Now our example serves to illustrate in what manner experimental social science must be ethically concerned. In order to procure plans which are satisfactory for the resolution of conflict, there must be a sympathy with and a concern for the conflicting interests in the situation. The better understanding there is of these interests, the more likely is the plan to work. Thus, as we have seen, improvement of the instruments for more satisfactory resolution of conflicts must include instruments for bettering the understanding of human interests.

This requirement, however, does not imply that interests are fixed or static or that they cannot be shaped in accordance with the requirements of a plan. But the plan must first be put to work before it can do anything. And the initial interests, which are to be somewhat transformed by the plan, are enough to wreck the plan at the outset unless it has adequately taken them into account. Otherwise, as Plato observed, we must start with a clean slate. But this is impossible.

The example of the TVA selfcorrective mediation policy also illustrates in what sense even the natural sciences cannot be ethically neutral. Successful planning in a technological world, as we have observed, requires the solution of innumerable technical problems. Attempts to solve these by science and engineering must be correlated with the general aims. Accordingly, the general plans will influence the type of research undertaken by the natural sciences involved in the enterprise.

But this condition does not involve on the part of the natural

[2] King, Judson. *The TVA Labor Relations Policy at Work*, National Popular Government League, 1940 (Takoma Park Station, Washington, D.C.).

sciences the sacrifice of freedom to determine their own problems. The case is quite the contrary. For, as a matter of historical fact, prevailing research problems have been largely determined by unplanned industrial and national needs, rather than by a pure theoretical concern. Although science has certainly conditioned or influenced these needs, it is just as certain that science has not *participated* in shaping them in view of both practical and theoretical considerations. The type of experimental-administrative control practiced by the TVA, however, gives the natural sciences a chance to participate intelligently in the shaping of the general plans. In this way science actually achieves freedom by helping to determine its own direction of growth through critical participation in the cultural forces which shape it. In return for accepting cooperative responsibility for its social consequences, science thus attains liberty from the blind influence of cultural conditions by helping to make these conditions enlightened.

VII

This is not the place to examine in detail the implications of selfcorrective social inquiry for the meaning of democracy. It must serve here simply to indicate a few important logical considerations. We have observed that experimental social science must be ethically concerned with human interests in order to use the conflict of interests as a test for improving its abstract material.

Now the ethical concern for human interests might well be taken as one defining trait of democracy. We have come to recognize, in practice perhaps more than in theory, that a man's ideals and values, however distasteful they may be for us, are *his* ideals and values. They are his because his interests are the stuff of which they are made. We even hold to this conviction of the intrinsic worth of all interest where the conflict with our own interests becomes too costly. For in a death struggle with an enemy we grant his *right* to his interests. This is a democratic achievement which we should guard jealously, however strenuous the battle and however loudly authoritarian voices may proclaim it to be a theological sin and a fatal commitment to the chaos inherent in a relativistic ethics.

When the conflict of interests becomes *too* extreme, however, then, by definition, we have no alternative but to try to destroy either the competing interests and values or him who holds them dear. In turn, when in the heat of the battle of ideals some of the values involved reach a melting point, one or more must go. Probably all are changed in one way or another. No values are so dear that they will not be sacrificed, if necessary, in order that a moving equilibrium among them and their sustaining factors may be maintained. This is to say more simply that life will probably go on (for a time) *at all cost;* when conflict becomes unbearable, one or more values must go.

Accordingly, if we define democracy in terms of an interest in interest—"good will" or "love" as it has been called—we can formulate its basic problem as that of securing less costly or more satisfactory methods for the resolution of conflicts. But this formulation of the basic problem of democracy is identical with that of our completed concept of selfcorrective inquiry.

The reasons why the identity of structure between science and democracy is not widely recognized are too involved for a brief analysis. But they can be stated under two general heads. In the first place our ideas of experimentation are shaped largely by the natural sciences, where the concrete material does not participate intelligently in the experiment. But in social inquiry the concrete material is composed of human beings. For two reasons this material must participate in the experiments performed upon it. (1) Data can be collected only by those who know something about the general plans which are functioning as tests, and to some extent, however little, all who come under the plans must furnish data. (2) Experimental control of choice can be obtained only by a controlling aim. But an aim can control choice, without eradicating it, only if it is shared by the one who chooses. Both of these conditions require the participation of the subject. As the advocates of dictatorship may learn, the neglect of these requirements leaves two crucial unanswered questions as to who will observe the observers and who will control the controllers. These conditions can be readily illustrated by the reader if he will think about them in connection with the drawing up and instituting of a successful labor-management mediation plan. For such plans must take ac-

count of the relation between the laborer's own interests and the employing concern; they must provide for grievance committees throughout the enterprise; and in proportion to their success they must institute increasing participation by employees in management problems.

The second general reason why we fail to recognize the identity of science and democracy is that we continue to think of the latter as *merely* political rather than as primarily economic and ethical. This is true even of many left-wing advocates of "industrial democracy". But the advent of dictatorships abroad and the amazing growth in the power of governmental administrative agencies in this country illustrate that the center of the problem of democracy has shifted from the legislative to the *fourth* or administrative branch of government. The shift has been necessitated by the glaring need for control and co-ordination of our economic life. This new type of control, which is already upon us, will be more or less dictatorial or democratic. What is more important, it will move in either a dictatorial or a democratic direction. If it is to move in the latter direction, then we must gradually institute democratic administrative methods which provide for the increasing participation of the ctizen. We must substitute these in place of the dictatorial (business) processes which we have traditionally taken for granted as being the essence of "efficient" administration.

Now it is tautologically true that if human interests are to be realized (not frustrated), they must realize themselves. This means that the individual must help to shape his own life by participation in the natural and social forces which influence his destiny—indeed, which give it whatever direction and meaning it has. But this condition we see to be the same as that required by social inquiry for the collection of data and the experimental control of choice.

The vague outlines of such an experimental-administrative setup can be observed in the TVA. Here both employee and citizen are brought around the conference table, and become active participants in administrative committees and plans. Here the idea of the citizen-scientist is in the making. Here, in spite of many costly shortcomings, frustrations, and failures, which are bound to occur, thousands of people, perhaps for the first time in their

lives, have come to have a taste of the functioning of a genuine democracy in a technological world.

In spite of the distractions of world conflict the Galileos of the new social method are busily engaged in various government agencies. They are hardly mindful of the battles of the "scholastic" dialecticians who are trying to prove by logic the necessity of a supernaturalist or absolutistic faith. The least that can be done by those of us on the outside is to help preserve their vision.

Toward this end we must win the war which we are fighting against the enemies of the method of intelligence abroad. We must win aaginst such enemies any future wars which our ignorance and bungling of this one may impose. Such a duty is ground enough for concerted and unified action. But at the same time we must not neglect the enemies of intelligence at home, whether they be our dollar-a-year men, or any other vested economic, managerial, military, or religious interest. To this end we can concentrate our thoughts upon the clarification of the issue between the method of intelligence or concrete freedom and the absolutistic method of transcendent Destiny. For once the issue is sharply clarified in the minds of Americans there need be no doubt of the outcome.

HORACE S. FRIES

THE UNIVERSITY OF WISCONSIN

DEFINITION AND ITS PROBLEMS

DEFINITION is one of the subordinate parts of logic that was cultivated by the classic medieval Aristotelian logic perhaps more highly than by modern thinkers. The medieval account of definition has consequently been altered less by modern thinkers than any other part of the classic logic. There are however serious objections to this classic account of definition. It is thought that every definition must be made in terms of other concepts; consequently exact and complete definition is impossible. Either some concepts cannot be defined, so that fundamental notions must be taken for granted, resulting in a lack of precision that inevitably runs throughout all science, or else definition must be circular, A being defined in terms of B and C, B being defined in terms of A and C, etc., resulting in a similar lack of precision and the impossibility of defining anything in a complete and exact manner. Dictionaries moreover do not always obey the six classic laws of definition and these laws themselves are redundant and overlap. It is hence necessary to think through the theory of definition again and endeavor to state a practical and consistent account of the subject.

Definition is not itself a discipline that exists for its own sake. Definitions are made for use in connection with some purpose. They are subservient to other logical or practical interests. Hence there can hardly be only one definition that is "best". In some cases such might indeed be the case, but in most cases there would seem to be several "best" definitions, each one being "best" for some particular purpose. The classic statement, that definition is a statement of a thing's essence,[1] must then be given up. "Essence" is vague and no one type of definition is always best.

There are two important purposes for which definitions are used: (1) For the explanation of the meaning of words to persons who do not know these meanings (which are *dictionary definitions*) and (2) for the careful and exact statement of what concepts are to be associated with a given term or word, for the purpose of determining when, in immediate experience or thought, there is present the entity or event denoted by this term or word.

[1] H. W. B. Joseph, *An Introduction to Logic*, p. 72.

(This may be called a *scientific definition.*[2]) The scientist who uses such a concept as "red" in a hypothesis must have some means of indicating to other scientists exactly what he means by this term, in order that they may check the correctness of his proof without any uncertainty about his meaning. Much time has been spent by the sciences in framing definitions: in physics, for example, work, force, mass, energy, etc., are carefully defined, in order that the physicist may be able to determine whether it is force, momentum, or energy, with which he is dealing. These two sorts of definitions, dictionary and scientific, do not conflict. In a few cases the same definition may serve both purposes. Usually, however, definitions suitable for scientific purposes are too technical to enlighten the person who knows little about the subject, for whom the dictionary definition is framed.

The dictionary definition does not really belong to logic, considered as a scientific discipline; yet it is well for us to consider it briefly in order to clear away misconceptions about scientific definitions. The classical theory has confused these two types of definition, with the result that it has made impossible demands. There are three requirements for a serviceable dictionary definition:

(1) It must be commensurable with what it defines. This is indeed the fundamental requirement for any definition, dictionary or scientific. Then a definition should be tested by being applied to borderline cases, and any lack of exactness or ambiguity in a definition should cause it to be rejected. For example, when "creation" is defined as "the birth of new things through the mutual services of pre-existing things",[3] it should be asked, for example, when pre-existing pieces of wood are put together to form a new chair, whether that is a case of creation, and, if so, what is the difference between creation and ordinary making.

(2) Since dictionary definitions exist for the purpose of enlightening those who are ignorant of certain meanings, a dictionary definition should always define a word by words that are better known than the word defined. This criterion is of course relative to the individual reader, since some persons will understand cer-

[2] I am here including logic and mathematics among the sciences.
[3] William Patten, quoted in G. T. W. Patrick, *Introduction to Philosophy* (1924 ed.) 138.

tain words used in a definition which other readers will not understand. Hence dictionaries usually define a given word in several ways, in order to avoid this difficulty. In dictionary definitions, the classical rule of avoiding the defining of an *ignotum per ignotius* is very much to the point. In scientific definitions, which are for the use of persons well acquainted with a subject, the avoidance of *ignotum per ignotius* is however quite unnecessary.

(3) Dictionary definitions must be capable of being written down, hence can only define one word in terms of other words. They must then be almost always conceptual in nature.

These three, commensurability, understandability, and (usually) conceptuality, are the only requirements I find for dictionary definitions. The other classical requirements are either unnecessary for the purpose of conveying an understanding of words or are included in these three. Synonyms, for example, need not be avoided; a better known synonym may indeed constitute an excellent dictionary definition, providing it is commensurate. Circularity of definition, as for example, defining "cause" in terms of "effect" and "effect" in terms of "cause", need not always be avoided. A person who knows the meaning of "cause" and is ignorant of the meaning of "effect" would be helped by such definition. Negative definitions, if they are commensurate, may be good, as when "bachelor" is defined as "an unmarried man". The use of genus and differentiae is usually helpful, but they need not invariably be used. The three specified requirements cover all that is needed.

Scientific or logical definitions exist for the purpose of enabling an intelligent person to determine whether a particular immediate experience or thought is or is not a case of what is denoted by a particular term. The fundamental requirement for such a definition is that an intelligent user must be able to determine exactly whether any supposed case of the term is or is not a case of the term. This general requirement leads to the formulation of two and only two specific requirements: (1) a scientific definition must be commensurate with what it defines and (2) it must define a term only in terms that have previously been defined. This second requirement demands the formation of a hierarchy of definitions. The use of genus and differentiae in definitions is a convenient means of organizing such a hierarchy. A science ideally starts with

a few fundamental concepts and defines other concepts in terms of those fundamental ones. Physics, for example, seeks to define all its units in terms of the centimeter, gram, and second. In properly drafted laws, an attempt is made to define each important term, such as "speeding" in traffic laws, in order that a judge may be able to determine when that term applies to a concrete case. If the law does not provide such definitions, the courts supply them. Those who deny the possibility of exactly defining any terms are usually challenging the possibility of organizing the hierarchy of meanings necessary for a scientific definition. In some of the less highly developed sciences, such as the social sciences and psychology, this hierarchy has not yet been organized; the more developed sciences, such as physics, have been for the most part successful in doing so.

I cannot see that any more than these two requirements are necessary for a scientific definition. Since such definitions are for the use of intelligent persons, the requirement of avoiding obscure words is not necessary; indeed, scientific, medical, and legal definitions are frequently couched in recondite technical but precise verbiage. Negative definitions may be quite good. The use of genus and differentiae is very convenient, but is not inevitable. The only two requirements are commensurability and definition in terms that are themselves defined (*i.e.*, the avoidance of circular definitions).

This second requirement leads to the occurrence of certain special types of definitions. We must now consider them.

Almost all scientific definitions are *conceptual, i.e.*, they define one term by another term, as in the common definition of "horse": "a solid-hoofed quadruped having a mane and tail of long coarse hair and relatively small ears and head." Russell calls this type "abbreviating definitions" and uses them extensively in *Principia Mathematica,* where one symbol is defined by stating that it is interchangeable with a more complicated symbol. The *Dictionary of Philosophy* calls this type "nominal definitions", but I need the word "nominal" for another meaning, to contrast it with "essential". The classical theory refuses to admit any other types of definitions except these conceptual definitions. Within a logistic or mathematical system, no other types of definitions are necessary.

But when such a system is applied to concrete experience, interpreting the terms of such a system by immediate experiences, as when a hypothesis in physics is tested by an experiment, something more than conceptual definitions is needed. It is a matter of nomenclature, the discussion of which is rarely fruitful, whether or not we use the term "definition" to denote these other means of identifying the particular immediate experiences or thoughts referred to by terms. The important fact is that these other means are in actual use and that they are quite homologous with what have been called definitions. It would seem that we have a right to extend the meaning of "definition" and call such non-conceptual procedures too by that name.

Terms that cannot be defined conceptually are often called logical ultimates or indefinables. The word "indefinable" is however a bad one, since a so called "indefinable" in a properly constructed logical system ought to be neither unclear nor devoid of meaning, as it would be if it were literally indefinable. The meaning of a logical ultimate (*e.g.*, "centimeter", "gram", or "second") must indeed be more exact and better understood, if possible, than that of any other concept in a system, for it is the fundamental building block out of which other concepts in the system are constructed. Such so called "indefinables" are merely indefinable by conceptual definitions. Since each term in a conceptual definition must be defined by some other term that has previously been defined, there must be some terms that cannot be defined conceptually. Which particular terms are defined conceptually or non-conceptually is usually a matter of convenience. It is nearly always possible, by varying the logical ultimates, to define conceptually terms that otherwise could not be thus defined. For example, mass could be defined in terms of weight instead of weight in terms of mass; the latter is merely more convenient for purposes of computation. There must however be some terms that cannot be defined conceptually. Hence we must inevitably face the necessity of framing non-conceptual definitions; otherwise the content of any fundamental logical ultimates could not be specified, all our definitions become inexact, and complete definition becomes impossible.

The "indefinables" of mathematics and symbolic logic are somewhat different in nature from the fundamental logical ultimates we

have been discussing. We can best understand these "indefinables" by considering an actual case. The unknown quantities in the equations of algebra may be interpreted (*i.e.*, temporarily defined conceptually) by the numbers of arithmetic, in which case algebra becomes a highly generalized form of arithmetic. These unknown quantities may also be interpreted by distances from a set of axes, in which case algebra becomes a generalized form of geometry. Similarly the classic (Boolean) algebra of logic may be interpreted to deal with classes or with Aristotelian propositions or with relational propositions, depending upon which interpretation we give to the terms in the classic algebra of logic. Such terms in a doctrinal function, which may be interpreted in more than one manner, have been called "mathematical indefinables". They are not however logical ultimates of definition, but are terms that are purposely left partly undefined, in order that they may be further defined when that doctrinal function is interpreted in various ways. Mathematical "indefinables" are moreover not left entirely undefined in the original system itself; an unknown quantity, such as x, cannot be interpreted as a symbol of an operation, such as $+$. Mathematical "indefinables" are terms that are partly defined conceptually and may be further defined (or interpreted) for particular uses.

We must now consider the varieties of non-conceptual definitions. A science can presuppose, what a dictionary cannot, that the user of its definitions can go to a laboratory, or out into the field, or to some other source of immediate experience, in order to secure the experiences necessary to understand a scientific non-conceptual definition. There are three chief varieties of non-conceptual definitions.

Some concepts can be defined entirely in words indicating some particular kind of experience, the production of which will bring about the sort of thing or event that is being defined. Such definitions may be called *causal definitions,* since they state the conditions under which the things or events to be defined will be caused. For example, the perceived color "red" may be defined as "the experience that a normal and attentive person invariably has when his retina is stimulated by lightwaves 760 to 640$\mu\mu$ in wavelength". This is not a conceptual definition, since it requires the measure-

ment of wavelengths, the production of a spectrum or part of it, and its reflection into a living normal eye. As an alternative to the above, "red" might be defined as "the effect invariably produced upon a normal person by any one of a certain specified set of pigments when viewed in normal sunlight". Such a definition requires the securing of all those pigments, their viewing by normal persons, under the specified conditions, and the determination of what effects are common to all cases of viewing those pigments (to eliminate emotions, etc.). A causal definition may be expressed in words, but it needs more than words for its comprehension—it needs certain experiences and the production of certain causal sequences.

A wordless definition is necessary to define the most ultimate of logical ultimates. Such a definition may be made by action, especially pointing. Pronouncing the name of the term to be defined, and, at the same time, pointing at sufficiently varied sets of situations, so that the only circumstance common to all the situations is the meaning that is being defined, will, especially if repeated, eventually bring to the mind of an intelligent person who observes the situations carefully a hypothesis concerning the meaning intended, which he can verify by comparing it with the varied situations presented to him. Thereby he can finally gain a clear and exact notion of the meaning of the term pronounced. This type may be called a *denotative definition.* (The term "ostensive definition" may denote a merely denotative definition or it may denote any non-conceptual definition. Since the meaning of "ostensive" is not quite clear, I have not been able to make use of it.)

Children acquire their first vocabulary by the denotative method. A foreigner among a people whose language he cannot understand usually arrives at the meaning of his first words in this way. Psychologists have used this method for defining the concept "triangularity" to monkeys and children—food was put in boxes successively labelled by various sizes, shapes, positions, colors, and backgrounds of triangles.[4] The monkey is said to have almost but not quite succeeded in grasping the concept, while a four-year-old child soon understood and went directly to the box with the triangle upon it. The making and understanding

[4] L. W. Gellerman, *Jour. Genet. Psychol.*, XLII (1933) 14.

of denotative and other definitions is dependent upon human ability to conceptualize experience.

Denotative definitions require (a) a clear and exact notion of the meaning of a term on the part of one person, (b) situations that contain varied examples of that term, and (c) an attentive and intelligent listener. The listener secures the meaning intended in the same way that any original hypothesis is secured—by the use of human creative imagination. The second requirement prevents us from defining "color" to a man born blind, since he can never have the immediate experience necessary to give him that meaning. When these three requirements can be met, any ultimate concept may be defined.

Such denotative definitions cannot however be placed in books, where science likes to store its knowledge. They can only be given in personal contacts. Since moreover most ultimates, such as "and", "for", "with", etc., are already understood unambiguously by every intelligent adult, it is rarely necessary actually to give definitions for them. A science can assume a set of already unambiguously understood terms and use them in building its system. What is needed is the possibility of defining them, in case their meaning is challenged or found ambiguous.

It is furthermore not necessary that every ultimate be defined in a purely wordless manner; as soon as one is defined wordlessly, it can be used in defining others. Such ultimates may be defined by *semi-denotative definitions,* using previously defined words along with certain experiences. For example, we define the name "Mary Jones" when we introduce her, saying "This is Mary Jones". The word "this" constitutes a species of pointing, along with which we use other words, thus making a semi-denotative definition. Similarly the meter is defined as the distance between two scratches on a certain bar kept in a vault at Washington. Semi-denotative definitions differ from causal definitions in that they require for their comprehension the having of certain experiences, rather than the special production of some specific causal process. The difference is analogous to that between observation and experimentation. These two types are not then fundamentally distinct in nature, but merely different in practice.

It is of course impossible here to establish that completely exact

denotative definitions are possible for all ultimates that may need thus to be defined. The number of possible concepts is so large that we can never be sure all have been considered, even by going through the largest dictionary. For each science it is merely necessary: to establish for it a hierarchy of conceptual definitions, to determine what terms used by it need non-conceptual definitions, to give, to as many terms as possible, causal or semi-denotative definitions, and to arrange for the giving of denotative definitions for the few others. Most of these remaining ultimates are common to many sciences, so that it would seem best to allot the task of defining them to some special discipline, such as logic or linguistics. Since the three requirements for giving denotative definitions are obviously attainable in most cases at least, complete definition would seem to be quite possible. Most troublesome is the first requirement—clear and exact thinking is not easy. Perhaps the greatest aid in this direction is constant criticism of one's own thinking, especially by applying each definition to borderline cases. The fact that some persons have achieved completely clear and exact thought upon their special subjects constitutes presumptive proof that complete definition has been attained, at least in some fields.

Scientific or logical definitions may thus be conceptual or non-conceptual. Non-conceptual definitions may be causal, purely denotative, or semi-denotative. By the use of such definitions, any term may presumably be defined completely, and a hierarchy of terms established to define the most abstruse and remote term, provided the necessary knowledge is available.

By using the foregoing analysis, it is possible to evaluate logically the definitions at present available in the sciences and philosophy. We thereby find many ambiguously or inaccurately defined terms, some selfcontradictory terms, but no inherently meaningless terms. The concept of a "meaningless term", asserted by the classical positivists, derives from an inadequate notion of definition. By a causal definition, a supposedly "meaningless" non-experienceable entity may be defined as "the x which has such and such properties, hence under such and such conditions, invariably causes such and such experiences". If those experiences are properly stated and the process of deduction from the non-

experienced x is necessary and unambiguous, so that no other x could have produced the collection of experiences specified, that non-experienceable entity is exactly specified. In this manner gravitation or the occurrence of an electron is defined. Imaginary entities, such as fairies, may be defined unambiguously and conceptually by a collection of properties that elsewhere enter into human experience, so that, should this supposedly imaginary entity exist, it may be identified by those properties or by the occurrence of their invariable and unambiguous consequences. As long as physics has succeeded in defining an electron, which is an entity that cannot enter into immediate experience, we should not refuse to attempt the definition of other non-experienceable entities or concepts.

In addition to the types of definitions mentioned above, the progress of science has produced two other types of definition, which constitute a classification that cuts across the preceding types. Terms are usually defined by specifying some set of qualities that distinguishes the occurrence of this entity or concept from the occurrence of others. For example, "George Washington" may be defined quite unambiguously as "the first President of the United States of America". This definition enables anyone to identify and specify George Washington quite accurately, although it tells very little about him. Very occasionally, however, it is also possible to define a term in such a manner that from the definition it is possible (by the aid of other propositions) to deduce all the properties that belong to the object or characteristic defined. This latter type may be called an *essential* (or real) *definition;* the other type, which Aristotelian logic would call definition by naming accidental features, may be called, by contrast, *nominal definition.* A triangle, defined as "any object with the same geometrical properties as the figure I draw on the board, when its lines reach the limit in straightness and thinness", is defined nominally; when it is defined as "a plane figure bounded by three straight lines", we have an essential definition, since all the properties of triangles are deduced from this definition, with the aid of other geometrical propositions.

Essential definitions can only be known to be such when a science has become, at least in part, a deductive system. Other-

wise it cannot be shown that such a definition enables the deduction of all the object's properties. Such definitions are the goal of science. Each science begins by using only nominal definitions, and only slowly proceeds to achieve essential definitions. Such a definition both points to an entity or event and also enables the user to deduce the properties of that entity or event from its definition, thus "explaining" the entity or event under consideration. An essential definition is then both a definition and also a hypothesis that may be tested by its consequences, hence it may be true or false. Nominal definitions are neither true nor false; they are merely conventions of designation, convenient abbreviations for propositions or experiences. Essential definitions may conceivably be made even for some individuals: a particular triangle may be defined in terms of the positions of its vertices in relation to a system of axes, from which definition may be derived its relations to other entities located in that system. Essential definitions, in the present state of the sciences, are however rare; they are confined to the more advanced sciences or the more advanced parts of other sciences. They are today mostly concerned with what Locke called "modes". In the "nuclear equation" for the simpler chemical elements, especially for hydrogen, from which there are already deducible many of this element's properties, we have the beginning of an essential definition for this element. The achievement of an essential definition always marks a great step ahead in any science.

Definitions are sometimes said to be arbitrary. But there are important limitations to such arbitrariness. A dictionary endeavors to give information about the use of words among intelligent people; hence its definitions must conform to usage and cannot be arbitrary. Science however frequently demands a name for a previously unused concept, such as "mass" in physics or "salt" in chemistry. Since there are far more concepts than words, the scientist can only use an old word with a new meaning. Such a change in the meaning of a word should however not be made without a real necessity and should always be condemned when there is available an old word having that meaning. We ought then to condemn the philosopher who defined "evolution" as "a directional change with a transition to novelty" and who goes on

to show, from the above definition, that evolution does not imply any goal or purpose and that it occurs in the physical as well as the biological world.[5] All changes are directional and produce novelties, so that the familiar word "change" should have been used for the definiendum of that definition, whereupon the whole argument is seen to be a truism! Editors and reviewers should police philosophical writings; any article failing to define its terms clearly or unnecessarily departing from established meanings of words should be considered unworthy of being offered to the public.

The foregoing summarizes the important features of what I find necessary for definition. To recapitulate: definitions are of various types, depending upon what function they are to fulfil. Dictionary definitions attempt to explain a meaning to a person who is ignorant of it. The three requirements for such a definition are commensurateness, understandability, and (usually) conceptuality. Scientific definitions attempt to enable the exact identification of cases of a term in experience or thought. There are two requirements: commensurateness and definition only in terms previously defined. Such definitions are conceptual or non-conceptual. Conceptual definitions, in any developed science, form an elaborate hierarchy, the creation of which is sometimes an extremely difficult task. Non-conceptual definitions may be causal definitions, denotative definitions, or semi-denotative definitions. In a few sciences, essential definitions have been achieved; most definitions are merely nominal. I hope that the foregoing account of definition fits the varied facts of scientific and logical usage and constitutes an intelligible and consistent account of definition.

HOMER H. DUBS

COLUMBIA UNIVERSITY

[5] *Monist*, XLII, 80-95.

THE VISION OF PARMENIDES

WAS Parmenides a poet? The commentators have made it clear that they do not regard him as a poet but rather as a dry logician. But why did he express himself in poetry and in hexameters, the stately style of the epic poets? It cannot be said to have been the fashion for a philosopher-scientist to use poetry. Parmenides' predecessors, who wrote books—Anaximander, Anaximenes, and Heraclitus—had used prose, at any rate what had the form of prose. Xenophanes, to be sure, expressed himself in poetry. But he was a rhapsodist, not a systematic philosopher.

Parmenides, as the prologue of his poem shows, had a revelation. In a great vision he saw himself passing from night into the light. The speaker in the poem is the goddess of truth, and a goddess might suitably use the form of speech of the gods in Homer and Hesiod. But why should a goddess speak except that it is a revelation? Is there nothing poetic in Parmenides' thought?

The first part of the poem may not seem poetic to us. But may it not have seemed so to young Parmenides? For according to the prologue he was a youth when the revelation came to him. May it not be that the vision which came to him has been obscured by the presentation? Being ushered from night into the light is certainly poetic. But what did he see? The difficulty is that, instead of directly giving us his vision, he first gives us a rationalization of it. His vision was of *It*. But what is *It?* In the first part of the poem he is mainly concerned with what *It* is not.

The commentators have certainly been wrong in saying that *It* is *being,* meaning by being what everything has in common with everything else, since we can use the predicate, to be, of everything. Such a concept is an anachronism in the age of Parmenides. Socrates first discovered or created the concept. And the general concept of being was first maintained as a substantive for theological reasons in the Middle Ages when God was characterized as being and as *the* Being in an absolute sense. For Plato "being" (reality), *on,* means form, which for him is the real in contrast to becoming, which is non-being. For Aristotle being is adjectival. It is not reality (*ousia*). It is unhistorical and absurd to suppose that the *It* of Parmenides is the concept of being. John Burnet

points out that the word, being, does not occur in Parmenides' poem. Parmenides could not think in abstractions. He was obliged to think in physical language.

Parmenides states the argument at the beginning[1] of the poem: "Come now, I will tell thee—and do thou harken to my saying and carry it away—the only two ways of search that can be thought of. The first, namely, that *It is,* and that it is impossible for it not to be, is the way of belief, for truth is its companion. The other, namely, that *It is not,* and that it must needs not be—that I tell thee, is a path that none can learn at all. For thou canst not know what is not—that is impossible—nor utter it; for it is the same thing that can be thought and that can be."[2]

Aristotle refers to the argument of Parmenides "as a merely contentious argument—a description which applies to the arguments both of Melissus and Parmenides: their premisses are false and their conclusions do not follow."[3] He further complains that they show no respect for fact. So it has seemed to others. But we must judge Parmenides in his own context. The fundamental postulate (to use later language) for Parmenides is that the real is thinkable and that what is unthinkable is nonexistent. When you think, you must always think something; and something means a physical thing. That would be admitted in Parmenides' day. In number, Parmenides could not think zero. It was not until some time in the Middle Ages that zero as a number was introduced into European thought by way of the Arabs. Parmenides could not think empty space as distinct from body, though he unintentionally promoted the discovery by making the distinction. Leucippus, in the next generation, seeing that space was necessary for motion and accepting motion as fact, declared that non-being (space) exists as truly as being (body). And so we have what, according to Einstein, are the two fundamental concepts of physics —matter and space. Space could only be discovered when it was recognized that it is no sensible thing. Time, for Parmenides, is not a physical thing; and it is, therefore, nonexistent. Past and future do not exist. There is only the present. The true meaning

[1] Frs. 4, 5.
[2] John Burnet's translation in *Early Greek Philosophy,* fourth ed., p. 173. Other translations, unless otherwise indicated, are from the same source.
[3] *Physics* 185a10, trans. R. P. Hardie and R. K. Gaye.

of time has been long waiting for a discoverer.[4] The meaning of non-being as difference was to be developed later by Plato in the *Sophist.* It is no wonder, therefore, that no-thing is unthinkable for Parmenides.

The positive side of the postulate is that what is thinkable exists. Hegel was to express the same idea many centuries later in his postulate: the real is the rational. And like Parmenides he converted it simply into the thinkable or rational is real. And so we have the ontological argument which Parmenides was the first to state: "It needs must be that what can be spoken and thought *is;* for it is possible for it to be, and it is not possible for what is nothing to be."[5] What Parmenides says about *It,* Leibniz says about God. The idea of God is possible and involves no contradiction; therefore God exists. It is true that what is thinkable varies in different historical contexts. But for Parmenides the conviction that the thinkable exists and that the unthinkable does not exist had momentous consequences.

Parmenides had a fundamental intuition when he felt that, in order for knowledge to be possible, there must be constancy. If there is no constancy there can be no reference, no discourse. Parmenides' constancy meant thing-constancy, constancy of substance. And ever since Parmenides science has been in search of thing-constants. Parmenides could not see that there can be constants in change. That was the next step in science. It was the step of the pluralists in the generation after Parmenides—Empedocles, Anaxagoras, and Leucippus. It was Leucippus' atomism which was destined to have a long career. The concept of atomic constants has undergone transformation in recent times. The constants have become electrons, protons, neutrons, etc. But science is still looking for thing-constants. There is another type of constancy, first suggested by Heraclitus—the constancy or repetition of function: "You cannot step twice into the same rivers for fresh waters are ever flowing in upon you." And: "We step and

[4] I had an intuition about time in my youth which I tried to put into a doctor's thesis, *A Theory of Time,* at Harvard, in 1899, and afterwards tried to explain in a monograph, *Time and Reality,* in 1904, and as part IV of *A Realistic Universe,* 1916, etc.; but, while Josiah Royce gave me credit for having discovered a new concept, the concept has not otherwise penetrated the fortifications of the academic mind. What I saw makes Parmenides' vision an illusion.

[5] Fr. 6.

do not step into the same rivers." The important thing is the constancy of the "measures" of transformation. We would say measures of energy. This type of constancy is the more fundamental but is foreign to Parmenides, since he could think only in static terms. Still we must credit Parmenides with first emphasizing the importance of constancy for thinking.

Thinking requires unity or coherence in the object. For Parmenides unity means identity—identity in the spatial present, since past and future are nonexistent. Coherence means a physical continuum. The *It* must be an absolute continuum. We must credit Parmenides with first defining a physical continuum. A physical continuum means nothing-between. The mathematical continuum, which was probably first defined by Aristotle, means that there is no next. In a linear continuum, there is always a point between any two points, however chosen, *ad infinitum*. Even when you introduce the further conception of a cut which is common to the two divisions, still the series is discrete. There is no next. For Parmenides *It* is indivisible. It is not only absolutely full but absolutely identical throughout. This means that there can be no variety. There can be no "coming into being or passing away, being and not-being, change of place and alteration of bright colour".[6] It does credit to Parmenides that he saw the efficiency of color in marking things off—a fact which Gestalt psychology has recently recognized. In short, for Parmenides, you can only think the same, which means the spatially, eternally same.

It is the irony of Parmenides' definition of *It* that when he gets through he has precisely—empty space, so far as the first part of the poem is concerned. I mean physical space—the space of Newton and Einstein, not the mathematician's space. Parmenides' continuum may be compared with Einstein's space-ether: "The ether of the general theory of relativity is a medium which is void of all mechanical and kinematical qualities. . . . This ether may not be thought of as endowed with the quality characteristic of ponderable media, as consisting of parts that may be tracked through time. The idea of motion may not be applied to it."[7] I do not think this is all of Parmenides' vision of *It*. But it is all that he describes in the first part of the poem.

[6] Frs. 8, 40.

[7] A. Einstein, *Sidelights on Relativity* 19, 20.

I cannot agree with Aristotle and others that Parmenides' argument is merely unconscious sophistry. His basic postulate that you must always think something, meaning something material, and its corollary that you cannot think non-being, meaning something immaterial, was historically true, though progress could only be made when science discovered the immaterial—the space of Leucippus and the forms of Plato. He made a permanent contribution in emphasizing that there can be no thinking unless there is constancy. If the world were annihilated every moment, even though created anew the next instant (as Malebranche supposed), there could be no science of nature, though constancy does not mean stopping the universe. (Plato called the Eleatics "stoppers of the universe".) There must be coherence in nature. Nature cannot consist in absolute, unrelated bits if we are to describe it. But the unity cannot be a homogeneous physical continuum merely, though physical space is such a continuum. Parmenides had the right intuition when he insisted that there must be community between thought and its object, or, as he puts it, "it is the same that can be thought and that can be", though that does not mean identity as he supposed. He saw the close relation of thought to language, "for you cannot find thought without something that is, as to which it is uttered". Parmenides' postulate that the real is intelligible is a general postulate of science, though that does not mean that reality is intelligible in terms of past concepts. Nor does it mean that the logically possible necessarily exists. His general postulate, *ex nihilo nihil fit*, from nothing comes nothing, is true in the sense that nature does not work by magic. In retrospect, at any rate, we can describe the conditions. It is not true in the sense that there can be no novelty, no emergence, in nature. Such a supposition is contradicted by plain facts. We may say that Parmenides created the first absolute monism, what William James called "a block universe". And it is to his credit that he had the courage to carry out his conviction to the limit, though the unthinking might laugh. It was the mission of his younger friend, Zeno, to turn the laughter on the scorners. However thoroughly we must disagree with Parmenides, we must reverence him for his sincerity. And Plato's Socrates bears witness to the fact that Parmenides was revered.

The *It* at the end of part one of the poem is a homogeneous physical continuum, bound by necessity into an eternal globe. We are told nothing about its nature further than that *It* is a thinking *It* as well as an extensive *It*. Like Spinoza's attribute of physical extension, *It* is indivisible. In fact, the nearest we come to Parmenides' *It* of the first part of the poem, in later history, is Spinoza's thought-endowed physical extension.

You may say that all this is very dry and prosy and does not merit expression in hexameters. But if it burst upon you as a discovery in your youth and in the youth of science, you too might have felt poetic. Parmenides' vision can only be real to us when we find what the *It* is which he has been trying to explain. Curiously, he reveals the vision of *It* in the second part of the poem which is supposed to deal with what isn't.

We can better understand what Parmenides means by *It*, if we try to see his place in the development of thought up to his time. What does he owe to his predecessors? We must not expect him to express his indebtedness. That is rare among philosophers and is unknown among the early Greek philosophers. At most, opposition is expressed. Parmenides mentions no names. But in the prologue he promises, through the goddess, to give a full account of the situation in the thought of his time. "Meet it is that thou shouldst learn all things, as well the unshaken heart of well-rounded truth as the opinions of mortals in which is no true belief at all. Yet none the less shalt thou learn these things also—how passing right through all things one should judge the things that seem to be." There is distinct reference to four predecessors—Anaximander, Anaximenes, Xenophanes, and Heraclitus. From Anaximander he got the bands of fire and night. "The narrow bands were filled with unmixed fire, and those next them with night, and in the midst of them there rushes their portion of fire."[8] The idea of earth as "dark night, a compact and heavy body", is an echo of Anaximenes. Justice, as keeping things in bounds (Anaximander and Heraclitus), is replaced by the more naturalistic idea of Necessity. To Xenophanes he owes something more fundamental. Parmenides is reported to have "heard Xenophanes". Of disciples we cannot speak among the

[8] Fr. 12.

early Greek thinkers. Aristotle's statement about Xenophanes' intuition that he, "gazing up at the whole heavens (*ouranos*) said the One was God", fits in, we shall see, with the *It* of Parmenides. Xenophanes' vision of one god who "sees all over, thinks all over, and hears all over", who "without toil swayeth all things by the thought of his mind", and who "abideth ever in the selfsame place, moving not at all", certainly has kinship to the *It* of Parmenides, though Parmenides is too naturalistic to use the term, God.

Parmenides' greatest indebtedness, however, is to Heraclitus, though he is the only one whom he criticizes. That is not an unusual phenomenon in philosophy. Classical illustrations are Aristotle's attitude to Plato and Hegel's attitude to Schelling. Parmenides is indebted to Heraclitus in a twofold way. Heraclitus had expressed most brilliantly the principle of transformation with its upward and downward path which only "undiscerning crowds" could accept. Heraclitus had furnished the capital illustration of non-being. For Parmenides, Heraclitus had made all thought impossible, for everything is in flux. But there was also that in Heraclitus which commended itself to Parmenides, though of course he gave no credit for that. Cosmic fire as the ultimate substance and the ultimate reason in the world was seized upon by Parmenides, as we shall see. The rest was lumped together as night or non-existent, which means untruth.

There is no indication of Pythagoreanism in Parmenides' poem. Certainly, numerical dualism or pluralism should have been condemned, unless Parmenides kept silent for personal reasons—which is not in keeping with his straightforwardedness. The dualism of the limited and the unlimited is doubtless a later development, but at any rate it would have been unspeakable for Parmenides. Burnet sums up our knowledge of ancient Pythagoreanism: "The entire history of the Pythagoreans up to the end of the fifth century B.C. is certainly conjectural".[9] I think we can understand Parmenides' poem without any speculative reference to Pythagoreanism, though no doubt the poem exercised great influence on Pythagoreanism.

We must now try to discover what Parmenides means by *It*. I think Parmenides has made it plain in the second part of the

[9] *Op. cit.* 185.

poem. The reason he did not make it clear at the outset was that he had an exaggerated faith in logic. And, therefore, he suppressed the basic intuition without which his logic, as always is the case, gives him only what he has implied in his assumptions. It does not touch reality. In part two he deals with experience and what science had disclosed about it. In his own language, he deals with "the opinions of mortals", including his own.

"Mortals have made up their mind to name two forms, one of which they should not name, and that is where they go astray from the truth. They have distinguished them as opposite in form, and have assigned to them marks distinct from one another. To the one they allot the fire of heaven, gentle, very light, in every direction the same as itself, but not the same as the other. The other is just the opposite to it, dark night, a compact and heavy body."[10] This seems plain enough to any intelligent reader. Of the two forms the first, "the fire of heaven", is the one that mortals should have named. The other, "dark night", mortals should not have named. How can we tell which of the two forms mortals should name? Has not Parmenides told us in the prologue that he had been ushered from night into the light? The truth had been revealed to him. Night and light are not metaphors for Parmenides. Light is a physical reality, and night is its opposite which must be banished. Light is truth and night is error. When we examine his characterization of "the fire of heaven" we find that it agrees with what he has been trying to say in more formal language about the *It* in the first part: "gentle, very light, in every direction the same as itself, but not the same as the other." Here we recognize the cosmic fire of Heraclitus—not the fire which enters into transformation but the fire to which Heraclitus refers when he says: "Wisdom is apart from all."[11] Fire-wisdom is set over against everything else. But it is also asserted by Heraclitus that "thought is common to all".[12] It is the same fire-soul which thinks in every one. Wisdom is the common, in the sense that it is the same for all. In a somewhat obscure fragment, Parmenides tells us: "That which thinks is the same in each and every man." That reads almost like a quotation. In either case it is the fire that is the same. We are informed by Theophrastus that Parmenides held

[10] Second part, 53-60. [11] Fr. 18. [12] Fr. 91a.

that "it is the proportion of the warm and cold in man that determines the character of their thought, so that even corpses from which the warm has been removed, retain a perception of what is cold and dark".[13] Heraclitus could have said the same. Heraclitus and Parmenides are in agreement that it is only by fire-wisdom that we have a knowledge of the order of nature. The difference is that Parmenides rules out time and process from reality as something unmentionable. Only the eternal exists. So impressive was Parmenides that philosophy has mostly followed him in treating time as "phenomenal", which is true of the concept of time which philosophy and science have had.

When it first flashed upon my mind what Parmenides had really said, I was not conscious that Aristotle had seen the same thing (though he did not develop the implications). Aristotle had the advantage of having the whole poem before him, whereas, of the second part, we have only a few disconnected fragments. Aristotle says: "He asserts that there are two causes and two first principles, heat and cold, or as he calls them, 'fire and earth'; of these he regards heat as being, its opposite as not-being."[14] Again, in the *Physics* we are told: "Parmenides treats hot and cold as principles under the names of 'fire and earth'."[15] The reader will note that Aristotle is quoting "fire and earth" from Parmenides. Aristotle is not always a sympathetic critic, but no one has accused him of being an outright liar. So when he says that he quotes, we must believe him. That Aristotle had Parmenides' poem before him is indicated by at least three formal quotations (beside the above) in the *Metaphysics*.

Burnet refused to take Aristotle at his word. "Aristotle's identification of these (hot and cold) with fire and earth is, however, misleading, though Theophrastus followed him in it. Simplicius who had the poem before him, after mentioning Fire and Earth, at once adds 'or rather Light and Darkness', and this is suggestive."[16] Yes, it is suggestive of the Pythagorean bias of

[13] John Burnet, *op. cit.* 192, 193.
[14] *Metaphysics*, 987a1, 2. Trans. by Arthur Fairbanks in *The First Philosophers of Greece*, quoted in M. C. Nahm, *Selections from Early Greek Philosophy* 120.
[15] *Physics*, 188a20, trans. R. P. Hardie and R. K. Gaye.
[16] *Op. cit.* 185, 186.

Simplicius in the sixth century A.D. Simplicius does not say that he got his substitution of "light and darkness" from Parmenides' poem. Obviously it is an interpretation. How Simplicius was misled by his Pythagorean bias is evident from the fact, which Burnet points out, that he identified Parmenides' goddess who steers the course of things "with the Pythagorean Hestia or central fire, while Theophrastus could not do that because he knew and stated that Parmenides described the earth as round and in the centre of the world."[17] Parmenides could not possibly have heard of the central fire as it is a late development in ancient Pythagoreanism. Simplicius and Proclus are unsatisfactory guides because they have absorbed the Pythagorean tradition. One would think that Burnet's evidence that Simplicius misinterpreted Parmenides to suit his Pythagorean prejudice in the case of Hestia should have made him sceptical when Simplicius substitutes "light and darkness" for fire and earth, in spite of Aristotle's and Theophrastus' evidence to the contrary. Burnet has a further difficulty with Aristotle. "Aristotle's identification of the dense element with 'what is not', the unreal of the First Part of the poem, is not easy to reconcile with the view that it is earth."[18] Not if we interpret Parmenides' *It* as a solid, spherical lump of matter, as Burnet does.

The evidence is conclusive that Parmenides' contrast is that of fire and earth. That Parmenides means earth we need no more evidence than we have in the extant fragment: "The other is just opposite to it, dark night, a compact and heavy body." That would be Anaximenes' way of characterizing the earth. But why did Parmenides choose earth to stand for the whole realm of what is not? We learn from Theophrastus that Parmenides "was the first to declare that the earth is spheroidal and situated in the middle of the universe".[19] The discovery of the spheroidal shape of the earth was capital. We find also that Parmenides observed that the moon shines with reflected light and revolves round the earth. Theophrastus does not seem to regard that observation as first "declared" by Parmenides, though it bears evidence of Parmenides being an observer and not merely a logician. If we

[17] *Op. cit.* 190. [18] *Op. cit.* 186.
[19] Fr. 6a, Fairbanks' translation, quoted by Nahm.

can reconstruct Parmenides' discovery of the spheroidal shape of the earth, it would throw light upon his dualism of fire and earth. I think that it is highly probable that Parmenides discovered the spheroidal shape of the earth from watching the shadow which the earth casts upon the heavens at twilight.

We can now conclude our argument, which we believe to be Parmenides' argument. The fire of heaven is the *It*, the truly existent, as it is also the truth of existence. At twilight we can see for ourselves how the earth darkens the sky, shuts off the fire of heaven. The earth which is the cause of the darkness—and is in fact the darkness—included for Parmenides, as it does for us who watch the same phenomenon, all that is part of the earth, not only the solid core but water and mist. It is all the earth's shadow or darkness. We have here the key to Parmenides' dualism of fire and earth. The white, homogeneous light of heaven is *It*. Color and all other variety is excluded by Parmenides, because he requires the unity of *It* in order to think *It*, and unity for him must be a physical continuum such as white light seems to be. (Newton first discovered that white light is composite.)

It is a long way from Parmenides to the latest science. But we too stand before the mystery of light. "The fire of heaven" is a good expression for what physics today means by light. But Heraclitus obviously has the advantage over Parmenides because he recognizes that fire must be fed, though the matter which feeds it is itself a degraded form of fire. Of course for Parmenides light does not move. And there is a mystery for us, too, about the movement of light. It does not move in the relative sense, and that is the only motion we know. Light engrosses physics today, as it did Parmenides, as the ultimate *It*.

Was Parmenides a poet? By gazing at the heaven he saw, what every one sees, that "the fire of heaven" is a globe. That was the way he really got the idea. The rationalization that the universe is bounded because it does not want for anything was a weak afterthought. He saw the sphere of light which the globular shadow[20] of night (which is the earth) at times obscures. Seeing the light he saw the truth which is the same thing. Banish the

[20] Later the earth's shadow was seen as conical, but that is a matter of perspective. I have found that the naive observer sees the shadow as spheroidal, as Parmenides saw it.

darkness, which is unreality, and the *It* shines forth in its glory. That is certainly a thrilling idea. Parmenides felt that he was a poet, but perhaps only a poet could recognize it.

It should, perhaps, be added as a postscript that, after his youthful vision and attempt at poetry, Parmenides settled down to become a very substantial citizen of Elea and was revered by his fellow-citizens who not only entrusted him with making laws for Elea but swore by them for many generations. We also know that, though he lived to a good old age, he never lost faith in his youthful vision. In Greece, in the fifth century B.C., a philosopher did not "lose face" by being a poet.

J. E. Boodin

University of California at Los Angeles

DISCUSSION

THE STATUS OF "WORLD HYPOTHESES"

A VOLUME[1] has recently appeared which, should the times prove ready for it, may well inaugurate a new era in the writing of systematic philosophy. Here is an essay in metaphysics that fits none of the pigeonholes into which readers of metaphysical treatises are accustomed to sort their proffered fare. They will find in it no attempt to expound the hitherto elusive ultimate truth about the universe, no demonstration that metaphysics is meaningless, no triumphant pouncing upon weaknesses in the arguments of other metaphysicians, not even any claim to have discovered a dialectic which promises to pilot us in due season to an apprehension of the true structure of things. In fact, the author believes that the history of philosophy shows all such enterprises to have been misguided. Yet metaphysics, he is sure, is worth while; in the proper sense of the word "knowledge" it yields knowledge of nature—a kind of knowledge that is supplied by no other intellectual quest. But it does so not by establishing any final system, but by providing the interested inquirer a limited number of world hypotheses, four at least of which are of approximately equal adequacy. Taken together, these cosmic theories give an understanding of the world that far surpasses the information available without them, and even surpasses the information offered by any one of them alone.

The major task Professor Pepper has set himself is a systematic clarification of these relatively adequate world hypotheses—which means explaining their origin, presenting each in the clearest, most consistent, and most persuasive light in which it is capable of being placed, and showing why and how metaphysics must use all of them in carrying forward its chosen task. The most distinctive feature of this distinctive enterprise is the author's hypothesis as to how world theories arise—a hypothesis which, he believes, if true, "shows the connection of these theories with common sense, illumines the nature of these theories, renders them distinguishable from one another, and acts as an instrument of criticism for determining their relative adequacy".[2] This hypothesis had been briefly presented in an article published eight years ago;[3] its elaboration occupies the key chapters of the present volume.

Other readers as well as I must feel their pulses quicken at the thought that there may be a significant third alternative to the popular current approaches to metaphysics. There is, on the one hand, the

[1] *World Hypotheses.* By Stephen C. Pepper. University of California Press, Berkeley and Los Angeles, 1942. Pp. xiii, 348.

[2] 84.

[3] *Journal of Philosophy,* vol. XXXII, no. 14, July 4, 1935.

traditional dogmatic defense of some chosen system; the futility of this way to metaphysics has for many years become increasingly evident. On the other, there is the scepticism which allows no positive validity of any sort to metaphysical theorizing. Can metaphysics chart another and more promising course under Professor Pepper's guidance? Let us follow the main thread of his argument and see whither it leads.

He begins by considering the claims of scepticism and of dogmatism; the outcome, as may well be expected, is a rejection of both. Scepticism fails, because as soon as a sceptic becomes vocal (and, if he remains silent, no one else need pay him any mind) he can be shown to hold, by implication, some theory about the nature of things such as would justify his scepticism. Now if this theory is held dogmatically the sceptic becomes a dogmatist; if it is held undogmatically it becomes a world hypothesis, to be considered on its merits along with alternatives. Dogmatism fails, whether in the form of appeal to selfevidence of principle or to immediate certainty of fact, because on objective examination these appeals appear to be merely attempted ways of protecting a conclusion against cognitive criticism; they add no evidence for that conclusion in which such criticism can discover corroborative value. If a principle is evidentially sound it can prove itself to be so whether or no anybody claims selfevidence for it; if a fact is a fact it will stubbornly render itself coercive whether or no anybody asserts that it is immediately certain.

We must proceed, then, by the hypothetical method, or that of partial scepticism, which regards any proffered principle or supposed fact as capable of being legitimately questioned, but which also takes it for granted that masses of evidence are always available to be constructively used in the developing process of their cognitive criticism. The quest for knowledge is the progressive refinement of what is already taken to be knowledge; if any attempted step in that refinement meets defeat, we are not left with scepticism but with the beliefs of common sense about the subject-matter involved, and below those beliefs we can never really sink. Attempted refinements often succeed, however, and in two directions. Through "multiplicative corroboration", *i.e.*, attesting the validity of an item of evidence by observing its repetition in many different instances, the "dubitanda" of common sense are refined into the "data" or accepted facts of the various sciences; this sort of corroboration is mainly a social process —the reviewing by other men of the findings of any one. Through "structural corroboration", *i.e.*, the convergence of qualitatively different items of evidence in support of a single item, commonsense beliefs or scientific data are refined into the "danda" of more or less comprehensive theories, binding them harmoniously together so that

each is supported by the rest; this kind of corroboration is more individual than social, depending on this or that thinker's pioneering imagination and power of systematic organization. Structural corroboration it is, of course, that primarily interests the metaphysician, since a metaphysical system is a theory claiming to cover, and to be supported by, all facts without restriction.

Now the general criteria of the adequacy of any attempt at structural corroboration are precision and scope—a precise hypothesis meaning one which exactly fits the relevant facts, while a hypothesis of sufficient scope is one which takes account of all the relevant facts. These two criteria merge in a world hypothesis; since the latter is unrestricted in scope it claims support from all evidence of whatever kind, and if the claim is just it must fit that evidence perfectly. And this consideration shows that limited theories—those claiming to hold only within a restricted field—are always in jeopardy, for they can never tell what evidence coming from outside their field may be found to conflict with their interpretation of evidence within it. "They demand, for their complete justification, the corroboration afforded by unrestricted structural hypotheses. The problem of the determination of degrees of cognitive reliability in terms of structural corroboration thus comes to a head in world hypotheses."[4]

But the history of philosophy presents us with hundreds of world hypotheses, and application merely of the criteria of precision and scope is by no means sufficient to enable us to tell which are most reliable. Certain theories, indeed, can be pronounced relatively inadequate by this means; Professor Pepper thus rejects animism on the ground that it fails to fit its facts with proper precision, and mysticism on the ground of inadequate scope—its failure here being openly betrayed by its denial of "reality" to vast masses of relevant fact. And these theories can then serve to some extent as negative standards by which to judge others; the farther away from them, in precision and scope, other metaphysical systems prove to be, the more reliable they may be regarded. But his root-metaphor theory of the origin of world hypotheses is presented as the chief means of simplifying this situation and of reducing the list of systems that deserve critical examination to a manageable number.

This theory may be briefly stated as follows. The philosophic imagination has drawn from experiences of common sense only a very few fundamental clues to world interpretation. Each of the main schools of philosophy has cognitively refined one of these basic clues, that is, has codified the implications of that chosen idea into a set of categories that hang together and claim power of corroboration by all evidence of every kind. That clue is its "root metaphor". Professor Pepper

[4] 326.

believes that there are no more than seven or eight such clues; the vast variety of historical systems is due to a largely unconscious eclecticism in combining strands of theory derived from different clues. Moreover, on critical examination four of these seven or eight prove to be so greatly superior to the rest that their pretensions alone need be seriously weighed; and these four are so nearly on a par in adequacy that they "must be given equal or nearly equal weight in any cognitive judgment or evaluation where we want all the evidence we can get on a matter".[5] These four, as might be expected, are very familiar acquaintances, though in dealing with all but one Pepper prefers to discuss them under unfamiliar names. The first is realism (called by him "formism"); whose root metaphor is the observed similarity between different objects and events. The second is naturalism or "mechanism", whose root metaphor is the machine. The third is pragmatism, or (as he has dubbed it also in other writings) "contextualism", whose root metaphor is the experience of change. And the last is organic idealism (in his terminology "organicism") whose root metaphor is the achievement of harmonious unity. Our author finds two neat bits of architectonic possible in relating these systems together; formism and mechanism are analytic theories as compared with contextualism and organicism which are synthetic, while formism and contextualism are allied as "dispersive" theories against mechanism and organicism as "integrative". Approximately half of his book is occupied with detailed analyses of these four relatively adequate systems, with special attention to the theory of truth involved in each. A high degree of impartiality is maintained throughout these analyses, so that a reader unfamiliar with Professor Pepper's intellectual biography would find it difficult to tell where his main sympathies lie. That each analysis contains many suggestive and penetrating comments on the world theory discussed goes, of course, without saying.

Philosophers who have followed me without having explored the volume itself will still, I suspect, assume that all this must be merely preliminary. Is there no grand finale, in which Pepper pulls his own rabbit out of the hat, distills from these four world hypotheses the true system of the world? No. If there are any rabbits here, they play a much less spectacular role. Pepper defends no system of his own. But does he offer nothing that the eager metaphysician can take to his workshop and put to positive use in his subsequent speculation? Yes. He presents four maxims, derived from the root-metaphor hypothesis, as guides in metaphysical theorizing. And his discussion of these maxims constitutes the most vital core of his entire argument.

The first is that world theories which are all derived from a single

[5] 329.

root metaphor are really one theory, differing merely in terminology, emphasis, or degree of refinement. The second is that each relatively adequate world theory is autonomous—provides, that is, its own detailed criteria of truth, fact, perception, and reason, and cannot be fairly judged by criteria drawn from alien systems. The third is that eclecticism is confusing. It destroys clarity by trying to combine categories derived from different root metaphors; this makes it impossible to see how adequate each set of categories can prove itself to be in securing evidential corroboration. Intellectual precision can only be achieved by keeping our root metaphors pure. And the fourth is that when categories have lost contact with their root metaphors in common sense they become empty abstractions, and the fallacy of hypostatization is committed. The third of these maxims Professor Pepper regards as most important; it is the key to rational clarity in theory. On the practical side, however, a reasonable eclecticism should prevail, since we do not yet know which of the four relatively adequate theories deserves most confidence.

"In practice, therefore, we shall want to be not rational but reasonable, and to seek, on the matter in question, the judgment supplied from each of these relatively adequate world theories. If there is some difference of judgment, we shall wish to make our decision with all these modes of evidence in mind, just as we should make any other decision where the evidence is conflicting. In this way we should be judging in the most reasonable way possible—not dogmatically following only one line of evidence, not perversely ignoring evidence, but sensibly acting on all the evidence available."[6]

So far, then, as any solution is given to the traditional issues between the philosophic schools, the author's counsel is that we should become realists, naturalists, pragmatists, and idealists all at once, accepting as fruitful the distinctive lines of structural corroboration which each provides, participating in the task of stating each system in the most promising form possible and tracing its detailed bearing on various philosophical problems, and being hospitably ready to apply any or all of them in any concrete context of speculative reflection.

Such generous supertolerance in the metaphysical arena deserves to be treated with more than tolerance itself; the only appropriate criticism here would consist in a cooperative endeavor to render, if possible, this approach to metaphysics even more constructively fertile than in the author's presentation it now is. This at least will be the spirit of the comments I propose to offer. I fully share Professor Pepper's sense of the complete futility of both scepticism and dogmatism in metaphysics; I applaud his genial hospitality in attributing

[6] 330 f.

essentially equal validity to several quite divergent systems, and his restraint in refusing to add a competing system of his own; I believe that his root-metaphor theory provides a partial (though by itself insufficient) account of the true origin of world theories, an account which greatly facilitates understanding the nature of each, its special advantages, peculiar limitations, and distinctive difficulties. Hence my criticism will proceed on the basis of very substantial agreement. An adventure of promising pioneering is before us, to be shared by all who are seriously concerned about the future of metaphysics. And I shall not even take the space for comment on many matters of more than secondary concern (such as Professor Pepper's choice of terms, his definition of "dogmatism", and his criteria of knowledge); I shall concentrate on problems which cluster about the root-metaphor hypothesis—what its metaphysical function is, how far it performs that function adequately in the author's hands, and by what methodological concepts it perhaps needs to be supplemented.

Professor Pepper himself appears to be not quite sure as to the role of this hypothesis in the metaphysical enterprise. There is no doubt on one main point—it proffers an explanation of the way the key ideas of any philosophical school originate in commonsense experience. But as to the further significance of such an explanation one meets varying statements. In his summarizing review of the argument, in the closing chapter, the significance of the root-metaphor hypothesis is described as consisting in its providing an effective shortcut in reducing to a small list the number of metaphysical theories that demand serious attention.[7] But in the body of the book this role is not mentioned. There the hypothesis is presented as itself a rough and makeshift metaphysical theory, rendered temporarily necessary because no theory at present is adequate, but to be accepted and refined by a fully adequate theory if and when the latter appears. In the meantime its task is "to squeeze out all the cognitive values that can be found in the world theories we have and to supply a receptacle in which their juices may be collected";[8] or, as a passage already quoted states the matter, to show the connection of these theories with common sense, throw light on their nature, render them clearly distinguishable from each other, and "act as an instrument of criticism for determining their relative adequacy". Now these two descriptions are not inconsistent, but the differences between them suggest that at an early stage in the development of his thesis Professor Pepper expected much more of the root-metaphor hypothesis than it proved capable of yielding—in particular, that he finally found himself compelled to abandon the earlier expectation that it might point the way toward a world theory more adequate than any now

[7] 328. See also 348, where this is definitely stated to be its only role.
[8] 86.

available, and that through the criteria of precision and scope, applied under the guidance of this hypothesis, it might provide in certain respects a standard of metaphysical truth. When he found four equally adequate world theories, and became convinced that attempts at eclectic synthesis are confusing rather than cognitively fertile, these hopes could no longer be seriously entertained. At the end the only purposes which the hypothesis appeared able to fulfill are those of accounting for the origin of world theories and reducing the number of initially plausible ones.[9]

This abandoned hope (if I am correct in so interpreting it) is very instructive to the reader of Professor Pepper's argument. I believe that he was wise in rejecting, in his final statement, any claim that the root-metaphor concept can supply a criterion of metaphysical adequacy. How could the way in which an idea historically originates afford any clue as to what may prove to be its cognitive worth? If it could, we should be able to formulate criteria by which one can now tell which sources in contemporary experience are more likely than others to engender promising metaphysical ideas in the future. But who will venture to state any such criteria? And how would he buttress the statement? As a matter of fact, Professor Pepper nowhere explicitly uses his root-metaphor theory as a criterion. His conclusion that the four world theories he favors are of approximately equal adequacy rests on no ground that can be traced to their roots in common sense, and even his use of the concepts of precision and scope to reveal inadequacies in animism and mysticism involves no appeal whatever to the nature of the analogies which account for their origin. Just what is the real ground of his impartial hospitality toward the four grand theories? The answer to this question remains pretty obscure in the body of the book, but the brief preface gives a suggestive clue. He had passed through at least three of these theories —idealism, naturalism, and pragmatism—in the course of his own intellectual pilgrimage, and had come to the conclusion, as a result of their persistent criticism, that no one of them was much better or worse than the other two. This suggested that perhaps there are still other systems which might appear as convincing as these three; is it an accident that his fourth theory is the most influential one in the history of Western thought besides those which at one time or other had enticed his acceptance? For why did he live through those particular three rather than others which were abstractly possible? The answer seems obvious. Due to their wide appeal in American philosophy during the last half century, any one pursuing philosophic truth in that arena could hardly avoid responding to their insistent

[9] In their present form Chapters iii and iv contain passages which seem to reflect both these stages of his thought.

claims; he would begin as a disciple of some one of them, and when that failed to satisfy he would succumb to the persuasions of one of its challenging alternatives. Thus, when Professor Pepper finally reached the stage of distrusting each of them, and yet fell into the mood of genial and sympathetic tolerance of all systems rather than that of impatient rejection of metaphysics as a sad delusion, these three, together with the other most widely and continuously appealing system, were the ones that naturally seemed approximately equal in cogency. But the basis of this judgment has no connection with the root-metaphor hypothesis; that basis would appear to be simply extent of historic influence in the Western world (and especially America) during recent decades.

And it is, I suspect, because his actual method of selection and evaluation in the case of metaphysical systems operates beneath the surface, having no connection with the theory which is his conscious concern, that he is unconscious of serious inadequacies in it which otherwise would quickly seduce the attention of such a broadly sympathetic philosopher as Professor Pepper. What, for example, would an Indian or Chinese metaphysician, who had gone through something like the progressive awakening and mellowing that Professor Pepper has experienced, think of a volume so obviously tolerant, in intent, of differing cosmic theories and yet assuming so blithely that the factors influential in recent Occidental philosophy are authoritative for philosophy at large? At a time when the hollow impertinence of the white man's grandiose notions of his superiority over the rest of mankind is ruthlessly exposed by military and political events, is not their preservation in philosophy rather grotesque, especially in a philosophy whose distinctive mark lies in its hospitable embrace of the most divergent systems? If our metaphysical method is to be guided by openminded sympathy rather than by a determination dogmatically to rationalize our own ontological predilections, where is there any reason why that sympathy should not be worldwide in its reach? And this would demand the discovery and application of a genuinely universal criterion of selection and evaluation among world theories in place of one derived merely from the dominant currents of Western thought.

Reflection on this inadequacy brings to light, I think, the major defect in the root-metaphor theory when its primary function is critically examined. This was, it will be recalled, to account for the origin of world theories. I believe that this account is correct as far as it goes, but incomplete; and the fundamental metaphysical differences between Eastern and Western thought intimate the main supplement which needs to be introduced. Professor Pepper nowhere squares his position with the issues raised by the so called "sociology

of knowledge", but in his detailed explanation of the root-metaphor theory he appears to assume that the selection, development, criticism, and abandonment of the analogies that underlie the various systems is determined by purely theoretical considerations, at least so far as the currently respectable systems are concerned. But surely a full explanation of the origin of systems must account, not merely for the fact that each was somehow hit upon, but also for the fact that it was hit upon at a particular time, in a particular nation, by members of a particular group, and gained the particular measure of influence that it did. The root-metaphor hypothesis gives no answer to these aspects of the problem of origin. Appeal to the dominant interests of a cultural epoch, a particular race, or a ruling class does purport to give such an answer; that answer may be mistaken, but whether it is or no some further explanation is clearly needed to supplement the root-metaphor theory and render its solution of this problem adequate. I cannot avoid the conclusion that if Professor Pepper had dealt systematically with this phase of the question of origin he would have realized more fully than ever that no theory of genesis can provide a criterion of rational adequacy. He would have reorganized his whole treatment of the metaphysical problem in the light of this realization, and would have raised challenging critical questions about the criteria of adequacy which appear actually to operate in his thinking.

For after all, despite the apparent rejection in the concluding chapter of any role as metaphysical criterion for the root-metaphor theory, the entire plan of the book and certain of its major results can hardly be understood unless that theory be regarded as providing such a criterion and therefore, contrary to his specific disavowals, as constituting a distinctive world theory itself.[10] I have said that explicitly Professor Pepper nowhere employs it as a criterion. But implicitly it does operate as a criterion, at certain crucial points. For example, one of the important questions that will surely be raised by every reader familiar with the history of philosophy is whether some of the systems which the author brands as eclectic are really pure, and whether some which he treats as pure are really eclectic. Realism, regarded by him as pure, in its modern guise at least would seem to be a synthesis of ancient formism and mechanism; how otherwise can one be historically just to the atomism which is fundamental to it? Now it is clear that the criterion by which Professor Pepper decides whether a theory is pure or eclectic derives directly from the root-metaphor doctrine, and from the particular list of root metaphors

[10] At least, it becomes such as much as positivism does, which Professor Pepper criticizes (rightly, I think) as implying a world theory unavowed by positivists.

which in his judgment the various systems disclose. Moreover, only in terms of the same theory can he justify his decision that eclecticism is bad, and attempts at rational synthesis misguided. For only if philosophies *must* arise in the manner described by this theory, and only if they are responsible to remain faithful to the specific and distinctive clue which guided their original formation, will such a decision appear coercive. But why should a system accept any such responsibility? Because otherwise it will necessarily fall into confusion, our author replies. And why may it not succeed in avoiding confusion? Because—there seems no other answer—it will be mixing different root metaphors. The root-metaphor theory thus does really provide the criterion for discriminating between pure and eclectic systems, and since Professor Pepper only regards pure systems as plausible candidates for metaphysical adequacy, that theory does function implicitly as a partial criterion of metaphysical truth. It definitely restricts the range and nature of the world hypotheses which are to be admitted to the further process of detailed evaluation. Had he really abandoned all criteriological claims for it, the structure of his entire treatment would be altered, and such questions as: What are the relatively adequate world theories? Is synthesis fertile or confusing?, would have to be settled on other grounds. And if a theory operates in this way to provide a cognitive standard for evaluating other metaphysical systems, must it not hold the status of an alternative system itself? It is no mere propaedeutic, nor even a temporary makeshift; it implies, at least, such a theory of the world as would justify these selections, discriminations, and evaluations. The same line of reasoning by which he insists that vocal scepticism and recent positivism really imply world theories would lead to the conclusion that the root-metaphor hypothesis is also a world theory.

For my part, I am forced by these considerations to reject unqualifiedly the attempt to render the root-metaphor hypothesis into a metaphysical criterion. And I do so partly because it seems to me clear on general grounds that no explanation of the origin of an idea can have anything to do with assessing its cognitive worth, and partly because the root-metaphor theory, when employed as a criterion, implies that synthesis of systems is inevitably confusing.[11] I agree, to be sure, that premature attempts at synthesis are exceedingly likely to be confusing—attempts, that is, made before the distinctive categories of a system have been clarified and their bearings on the major problems of philosophy systematically traced, so that one can tell where its points of strength and of weakness lie. But after this stage has been reached, how can further progress be made except by the

[11] Pepper recognizes no significant difference between "eclectic" and "synthetic". See especially pp. 106-108.

imaginative intuition of integrative categories which in their implications preserve and bind together the strong features of previous systems? New, pioneering ontologies can be concocted, of course, revealing no explicit attempt at synthesis of already existing systems; but unless they do in fact embody the more fertile aspects of such systems they accomplish nothing that can be called progress; they will have their own points of strength, but these will be likely in the end to show no greater value than the strong features of the ontologies from which they diverge. Professor Pepper himself asserts that "as we trace the history of cognition over the last twenty-five years we get a definite sense that from different angles our theories are closing in upon the world".[12] How could they be progressively closing in upon it if the continuously verified aspects of earlier theories, or earlier formulations of a theory, were not in general preserved and combined with freshly promising concepts in later theories; and is not this a process of selective synthesis?

It seems to be obvious that some of the most valuable intellectual achievements of the past have been accomplished through the kind of synthesis that flatly violates Professor Pepper's maxims. The fundamental concepts of modern physical science, for example, bring together in a single whole elements derived from at least two theories —formism and mechanism—which he counsels us not to mix. I doubt whether any such concept can be understood historically without reference to both those theories. Take, for instance, the concept of "law".[13] In its very essence, this concept preserves something vital in the formistic conception of "form" as well as something vital in the mechanistic conception of "regular interrelationship" among the parts of a machine. And I can think of no statement of either formism or mechanism as a metaphysical view, calculated to appear at all persuasive to any modern mind, which has not somewhere drawn upon those features of modern science which synthesize earlier formism and mechanism in precisely this fashion. And if we look at the history of philosophy through other glasses than those which Professor Pepper wishes us to adopt, we shall readily see that the influential philosophies divide into two groups—the pioneering systems which break an area of new ground and try out the possibilities of some previously untested root-metaphor, and the reconciling systems which unify, not in the fashion of a bargain-hunting eclectic, but on principle, ways of thinking previously appearing essentially in conflict. Both types of philosophy are indispensable, but the latter type performs a function without which the history of philosophy would be nothing but a sequence of disconnected speculative soliloquies. And it is no accident that the most influential systems of all are the reconcilers of reconcilers, that is, the philosophies which bring to-

[12] 331. [13] As employed in science.

gether and build upon systems which have already selected and harmonized varied viewpoints of a still more extreme and onesided character. In Western thought, I suppose, Aristotle, St. Thomas, and Kant, stand as the chief illustrators of this role.

Let us, then—such is the final judgment to which I am driven by Professor Pepper's argument—accept gratefully the illumination offered by the root-metaphor theory as a partial explanation of the origin of key ontological ideas, and let us profit by its tolerant, antidogmatic implications. When one recognizes that his metaphysics is an attempt to stretch toward universal application notions drawn from some limited sphere of commonsense experience, it becomes somewhat absurd to think of its conclusions as more than problematic, and rather ridiculous to assume that there are no other notions, originating elsewhere, with as promising possibilities of stretch as those which happen to have seduced one's own speculative fancy. I suspect that in this direction lies the chief virtue of Professor Pepper's contribution. Let us develop to the full the instruction it can give respecting the nature of world theories and the inevitable handicaps under which they lie. But let us avoid attempting to harness the theory to tasks it is incapable of performing; in particular, let us resist the temptation to make it, however indirectly or cautiously, into a criterion of metaphysical adequacy. In this role it will lead us seriously astray. It will require us to renounce on principle the only method which promises philosophical progress. On the side of criteria, our desperate need is guidance in applying the method of synthesis more objectively and more successfully than it has been applied in the past, so as to facilitate the critically selective achievement that philosophical history itself performs in halting, tortuous, cantankerous fashion, and thus carry us more smoothly toward the agreement of competent, trained minds which is the ultimate test of cognitive adequacy in metaphysical speculation as in other intellectual fields.

I should like to end, however, on the note with which I began. Despite these criticisms, Professor Pepper's book seems to me to mark a very constructive and hopeful departure in metaphysical discussion. Here is a clearer and more persuasive alternative to metaphysical dogmatism and antimetaphysical positivism than I have elsewhere seen. Here is an author who states conflicting ontological systems in such a way as to present each in the most favorable light possible, instead of gloating over the weaknesses of all but his own pet system. Here the path is partially cleared for a methodology that might seriously grapple with world theories on a hospitable and cooperative basis. If the times are ready for speculative work in such a mood as this, here is a prolegomenon to any future metaphysic.

E. A. BURTT

CORNELL UNIVERSITY

THE STATUS OF "WORLD HYPOTHESES": A REJOINDER

PROFESSOR BURTT has so well brought out the main intentions of *World Hypotheses,* and has been so generous in his comments upon it, that I hesitate to accept his invitation to write a brief rejoinder. Nevertheless, his conception of the role which the root-metaphor theory should have, or implicitly does have, in the book is so different from mine that I welcome a chance to make myself clearer on this issue.

I do not, of course, regard the root-metaphor theory as a world hypothesis. A world hypothesis for me is an unrestricted hypothesis, by which I mean negatively one that rejects no evidence from its field, and positively one that seeks the organization of the totality of evidence. On this conception, I hold that the root-metaphor theory is definitely a restricted hypothesis. It is restricted to world theories as its field of study. It is a theory about world theories, and has no interest in other kinds of theories or in evidence not in the process of being organized into world theories. It is consequently not itself an organization of the totality of evidence. It cannot, therefore, legislate over any relatively adequate world hypothesis, since any such hypothesis is cognitively more refined, more extensively corroborated. For the same reason the root-metaphor theory could not be regarded as on a cognitive par with any of the relatively adequate world theories. If by metaphysical theory is meant what I have been defining as a world theory, then the root-metaphor theory is not a metaphysical theory and so is certainly not my metaphysical theory.

Then how, it may be asked, can it function so prominently in my exposition of the nature of world hypotheses? The answer, I think, is clear as soon as one places the emphasis of the study, as I hoped I had placed it, upon *evidence.* I believed I was simply following the trends of evidence, and that the theories which came out along the way were simply the precipitates of the evidence.

The order of the steps of my argument, so far as it bears on the root-metaphor theory, is as follows: (1) First the rejection of dogmatism, and here should be particularly noticed the rejection of certainty of fact as a type of reliable evidence. For this leads immediately to (2) second, the dependency of evidence upon corroboration. Confining our attention to structural corroboration, which alone concerns the root-metaphor theory, we find (3) third, that structural corroboration involves hypotheses, that it comes to conclusive results only in world hypotheses, and that in world hypotheses ultimate evidence and hypothetical interpretation so permeate each other that, except for the presence of other world hypotheses, a thinker would never suspect that the ultimate evidence of one of these hypotheses was not pure and uninterpreted fact. Thus (4) fourth, we do find alternative world

hypotheses, which have developed simply in the process of structural corroboration seeking a maximum of such corroboration.

Here we might stop and merely undertake to estimate the relative cognitive value of the many world hypotheses that have emerged in the history of human enquiry. In doing this we should watch for the internal consistency of the organization of evidence in terms of precision and scope, which are the cognitive aims of structural corroboration. This is a laborious process, though in the course of philosophic criticism it has already been largely done, and has resulted in the recognition of philosophic schools or, what amounts to the same thing, trends of evidence in structural corroboration. Now (5) fifth, the root-metaphor theory is simply an attempt to discover and describe the grounds for these trends of evidence in structural corroboration. I will not repeat the theory. But what it does, in so far as it may be confirmed, is greatly to clarify the trends and the results of structural corroboration, and thereby to simplify our criticism of world hypotheses by exhibiting their sources and stages of development and eclectic mixtures. These sources and stages of development, moreover, act as cognitive criteria for estimating the cognitive value of any hypothesis presented which resorts to them. For instance, if I am correct in judging phenomenalism to be a partial development of the world hypothesis of mechanism, and if a contemporary philosopher presents a phenomenalistic theory for consideration, I can immediately judge it to be simply a half developed mechanism which fails to see and refuses to follow out its own corroborative implications. As I said in the text, the root-metaphor theory is not essential to the discovery of the results and of the cognitive contributions of world hypotheses, but I do believe that evidence confirms it and that thereby we obtain a much clearer picture of the present status and rounded contribution of structural corroboration than we could without the theory.

But if the root-metaphor theory logically follows the development of world hypotheses, instead of the reverse, it may be asked why I set the root-metaphor theory before the world hypotheses in the material of the book. The answer is: for reasons of simplicity of exposition. These are the only reasons.

I do not think the book constitutes even implicitly a metaphysical theory. It is not even presented as a final statement or ultimate theory of the nature or limits of cognition, but simply, so to speak, as a report of progress. There is no intention of judging world hypotheses by their origins. They are judged by their degree of cognitive refinement in terms of structural corroboration. And there is no intention, as some of my readers have thought, of limiting acceptable world hypotheses to the four relatively adequate ones I have presented.

I have personally found evidence for no others of nearly equal adequacy in occidental thought. I do regret that my acquaintance with oriental philosophy is so slight, but from my small reading in that direction I conceived that oriental thought had moved along essentially the same lines as occidental, though with different emphases, and a totally different terminology. Have they not besides mysticism extensively developed mechanistic and formistic modes of thought? Are there not also evidences of organicism and possibly of contextualism? That there may be other root metaphors in oriental thought, which have not entered into the occidental stream, would not be improbable. I confess it was partly because of my belief that many of these modes of thought were present in diverse cultures—just as mechanism and formism are to be found in Greek, Roman, Medieval, and modern European cultures—that I felt myself justified in merely mentioning on the second page, and then ignoring in this study, the sociological influence Professor Burtt alludes to. Cultural interests, I believe, account for the emphasis placed upon certain types of thinking at certain times, and for the kinds of eclecticism most appealing at certain times, and even perhaps for the emergence of certain root metaphors at certain times, but I cannot see how they have anything to do with the corroborative powers of certain types of thought.

The main intention of the book is to clarify the philosophic field and permit us to see what evidence has been gathered together and how it is distributed. As Professor Burtt so clearly brings out, its implicit admonition is: "Let's go on from here".

STEPHEN C. PEPPER

THE UNIVERSITY OF CALIFORNIA

MEANING AND VERIFICATION

OUR problem is to show the relationship between verification and the meaning of factual, *i.e.*, synthetic, propositions (or statements or sentences). This can be done (1) by clearly differentiating between the semantical and the syntactical dimensions of meaning,[1] (2) by explaining that verification[2] of a proposition may be *indirect* and consequently that the means of verification is not necessarily the meaning of the proposition verified,[3] and (3) by showing, finally, that

[1] See "Foundations of the Theory of Signs", by Charles W. Morris, in *International Encyclopedia of Unified Science*, Vol. I, No. 2; "Two Kinds of Certainty", by D. L. Miller, in *Philosophy of Science*, Jan., 1940.

[2] Rudolph Carnap uses the word *confirmation* instead of *verification*. Then, also, there are degrees of confirmation, partially confirmed sentences, etc. Consequently, his use of *confirmation* seems to be no different from the pragmatic use of *verification*.

[3] For writers contending that the meaning of a sentence and the verification of it are one and the same, see Boas & Blumberg, "Some Remarks in Defense of the Operational Theory of Meaning", *Jour. of Philos.* XXVIII

there is a confusion between our belief in the recurrent order of events on the one hand and the referents or meanings of statements on the other. This confusion may be expressed differently by saying that because of the recurrent order of events such as *a*, *b*, *c*, we may infer or predict *c* upon the presence of *a* and *b*, but that we should not mistake (as some do) the statements about *a* and *b* for statements about *c*.

The first premiss of both the logical positivists and the pragmatists is that factual statements must have experiential reference (or experienceable referents) in order to be meaningful. Both agree that factual statements make a prognosis and it is because of their prognostic character that they are verifiable (as well as hypothetical). An answer to our problem involves showing that some factual statements are verified directly, others indirectly. After this is accomplished, it will be easier to show that the meaning of a sentence is not necessarily identical with the means of verifying it, since in case of indirect verification, as when we verify a statement about the mass of Saturn by noting deflections of other planets from their courses, it will be obvious that the means of verification and the meaning of the statement verified are quite distinct. Consequently it can be shown that there is no necessary connection either in meaning or in fact between the factual referent of any statement and the means of verifying it. After showing this it will follow that a factual statement may have meaning even before the means of verifying it is known.[4] Finally, in order to explain how some persons have come to the general conclusion that "The meaning of propositions is identical with the conditions of their verifications",[5] it will be shown that there is a confusion between what a factual statement means and what can be inferred (not strictly, but with probability) from what it means.

To begin our argument, let us state some assumptions about which probably there will be no disagreement. (1) Every statement, whether axiomatic, definitive, or factual, has intension reference; which is to say, it may be considered analytically. *E.g.*, "This is a square" means also "This has four equal sides", *etc.* "This is a rat" means "This is an animal", *etc.* (2) It is impossible (by conceptions or because of inconceivability) for some sentences to have factual reference. *E.g.*, "There is a *round square* on the table", "There is an unextended body". However, these sentences may be analytically considered and transformed thus: "It is false that there is not a round square on the table"; "It is false that there is not an unextended body". (3a)

(1931); Blumberg & Feigl, "Logical Positivism", *Jour. of Philos.* XXVIII (1931). For opposition to this view, see C. J. Ducasse, "Verification, Verifiability and Meaningfulness", *Jour. of Philos.* XXXIII (1936).

[4] Blumberg & Feigl, *Jour. of Philos.* XXVIII (1931) 293. In this same article they write: "To know the meaning of a proposition is to know what must be the case if the proposition is true."

[5] From Carnap's paper, read at the meeting of the Eastern Division, 1935.

Semantically or extensionally a statement means the fact or facts to which it refers, and they are its referent or referents. (3b) Considered extensionally a meaningful statement has an experiential referent.

The following contentions are still in dispute by several philosophers, but in the remarks below we shall show that they are valid. (1) A statement considered semantically actually has a particular factual referent if it is true. (2) Direct verification of a sentence consists in having a direct experience with the object meant by the sentence. Once a statement has been directly verified, it can be verified further only indirectly, and further direct verification of it is impossible. This is because verification must take place at a particular time. (3) Indirect verification of a statement *p* consists in directly verifying one or more other statements *q, r, s, etc.* Here *p* means a factual situation or simply a spatio-temporal event, but the means of verifying *p* is by way of verifying *q, r,* [illegible] statements *q, r, s, etc.*, refer to events other than that to which *p* refers, but the events are believed to be dynamically (or causally) related.

It seems that those who identify the meaning of a factual statement with the means of verifying it are not differentiating between the causal relation of events and indirect verification. Indirect verification can be supported theoretically only if we posit a dynamic relationship between the referent of a statement *p* and the referents of the statements *q, r, s, etc.*, whose direct verifications indirectly verify *p*. Hence in indirect verification, after directly verifying *q, r, s, etc.*, we infer that *p* is true (or false) because the referents of *q, r, s, etc.*, are believed to be events belonging to, or constituting phases of, a single natural process of which the referent of *p* is also a phase. *E.g.*, after hatching an egg and getting a chicken we infer that the egg was laid by a hen. Now the chicken, as a directly verifiable event, and the laying of the egg by the hen, are distinct events; yet they belong to a single process. Nor does the statement "this was laid by a hen" *mean* "this is a chicken".

If we can rid ourselves of confusion between the causal relationship of events and the referents (or meanings) of statements, we can see clearly why statements calling for indirect verification can never be more than highly probably true, or why they remain hypothetical from a strictly logical standpoint, as against axiomatic and definitive statements, which are said to be certain.

As suggested above, many (*i.e.*, all factual) statements may be considered both semantically and syntactically, or factually and analytically. Mere transformations of a statement are analytic, and we are certain of them in a quite different way than we are certain that statements having factual referents are true. The truth of a statement

considered semantically must be shown through sense experience. In inductive inference we conclude that because a certain factual situation is the case another factual situation, spatially or temporally separated from the first, is also the case. Our basis for such inference is experience itself, by virtue of which we conceive two or more events as correlated in such a manner that one involves the other. *E.g.*, if events *a*, *b*, *c*, are believed to be correlated, than *a* and *b* may be inferred as having (or as probably having) taken place if we witness *c*.

Here it may be argued that no statement can be verified directly. Our answer is that, whenever there is verification or confirmation by experience, there is direct and (for the time) *complete* verification of some statement. Whenever evidence bearing on a particular statement is gathered, such evidence at that time is considered *indubitable*. Each bit of evidence is an indubitable direct verification of some statement. Unless verification were thus considered; that is, unless we accept a given direct experience as final, in that at that time it completely verifies (not partially and hence with mere probability as over against certainty) some statement, we will find ourselves saying: "it is probable that it is probable, etc., that we have evidence bearing on our problem". A statement heretofore regarded as completely verified by direct experience (*i.e.*, directly verified) may later become and often does become doubtful. However it can be further verified only indirectly, and then every bit of evidence consists of statements directly verified, and a belief in the truth or falsity of these statements is not in question for the time. Yet it may become so later, and so on.

One reason for believing that many if not all statements do not *remain* completely verified (that is, that we do not remain certain of their truth or falsity) is that events (the referents of statements) are dynamically related. We become doubtful about the character of the past because of our experiences of present events. Why should our belief about present events affect our beliefs about the past? Simply because of the general assumption that events are interrelated. We infer that an event *a* took place or will take place because of the presence of *b*. This can be done only if *a* and *b* are believed to be related. In this case we verify a statement about *a* by verifying a statement about *b*. Yet the two statements are distinct from each other and mean quite different things, namely *a* and *b*.

The confusion which amounts to mistaking the referents of *q*, *r*, *s*, etc., for the referent of *p* can well be accounted for. It has arisen from two different sources. First, inasmuch as in strict implication or analytically we can infer, from $p.-(-p)$ and $p.\ (q.r)$, that $-(-p)$ and $(q.r)$ constitute at least a part of the meaning of *p*. This, however, cannot be carried over into reasoning about the relation-

ship between natural events. Event *a* may suggest *b*, or we may infer the presence of *b* from the presence of *a*, but here our inferences are hypothetical, for, if there is a necessary relationship between events, this relationship cannot be deduced from statements about a single event, but can be discovered only by experience. Secondly (and in accordance with the antimetaphysical movement in philosophy), in holding that factual statements must have experiential referents, some have contended that those referents must all be experienced or experienceable in the present or the future, since of course they cannot be experienced in the past. From this contention they go one step further and conclude that the meaning of a factual statement, *p* (that is, its referent), is actually constituted by the means of verifying it, though the means (we believe) is often indirect; *i.e.*, a direct verification of statements not *p* but supporting (by virtue of the dynamic relation of events) the truth or falsity of *p*.

To summarize: (1) Direct verification consists in accepting immediate experience as evidence that some statement *q*, or *r*, or *s*, *etc.*, is true (or false). (2) Indirect verification consists in accepting directly verified statements, *q*, *r*, *s*, *etc.*, as evidence that *p* is true (or false). (3) A factual statement, *p*, means a factual situation or situations and those are its only referents. (4) The means of verifying *p* may be direct or indirect or both. (5) *p*'s referent or meaning is not identical with but quite distinct from the referents of *q*, *r*, *s*, *etc.* Yet *q*, *r*, *s*, *etc.*, may be means of verifying *p*. Hence (6) the means of verifying *p* is not identical with its meaning. Finally (7) the confusion resulting in the belief that "the meanings of propositions are identical with the conditions of their verification" is due to the confusion of indirect verification with the belief in the dynamic relationship between events. This relationship has been called the causal relationship, although we are not contending here that there is such a relationship. All we mean to say is that, if there is such a relationship among or between events, then and then only would the positivist's argument, that meaning and verification are inseparable, be valid.

With these factors in mind it is easy to understand that indirect verification of *p* can give us at best only high probability or practical certainty, but never logical certainty. For this reason *q*, *r*, *s*, *etc.*, do not mean *p*. *p* has a confined meaning, its factual referent. *q*, *r*, *s*, *etc.*, bear on the proof of *p* only if their factual referents are believed to be causally related.

Since the process of verification is not identical with the meaning of a proposition, it is quite possible (and in fact is often the case) for statements to have meaning before a means of verifying them is known. *E.g.*, we might have inquired meaningfully about the mass of Saturn long before a measure of its mass by way of deflections (*i.e.*,

by way of the use of Newton's laws) was known. Here some say loosely that Saturn's mass *means* these deflections. That is not true. Those results may *depend upon* Saturn's mass, but they also presuppose Newton's laws, and hence a causal relationship. Here we may say that, *if* Saturn's mass is so much and if Newton's laws are correct, *then* the deflections will be such and such. But these deflections would be effects of the mass and not the mass as such.

DAVID L. MILLER

THE UNIVERSITY OF TEXAS

REVIEWS OF BOOKS

The Forgotten Hume: Le bon David. By ERNEST CAMPBELL MOSSNER. New York, The Columbia University Press, 1943. Pp. xv, 251.

Mr. Mossner has had a very happy idea, one of those ideas which, after the event, you wonder that someone did not act upon long ago. Of books about David Hume's philosophy, or about some phase of his intellectual life as a historian or economist, there has been a continuous and a copious stream. Mr. Mossner reckons them at two a year on the average for the last two centuries. But of books about Hume as a person, a man of letters who made a chief figure among men of letters in his time, there have been few at any time and none recently, with the single exception of the biography published in 1931 by Mr. G. Y. T. Greig. For the generation that followed Hume's death his personality was eclipsed by the figure of Dr. Johnson, who became in 1791 the subject of the most remarkable biography in the language. Later generations were inclined to take Hume at Carlyle's biassed estimate: his philosophy "a flat continuous thrashing-floor for logic, whereon all questions . . . are thrashed and sifted with the same mechanical impartiality"; his personality that of a man who "not so much morally *lived,* as metaphysically *investigated*". This estimate says much about an age in which partiality had come to be regarded as a chief requisite of moral living and metaphysical investigation. Mr. Mossner has written his book to show that it says nothing at all about Hume, or about the rich and varied activity of life and letters which he shared and largely led.

Hence his subject is "the forgotten Hume"—not the philosopher, for Kant's recognition caused Hume to be acknowledged as the chief of British thinkers; not the economist, for the economic essays were at once accepted as, within their limited scope, not second even to the work of his great friend Adam Smith; and not the historian, for the *History of England* was received as standard until Macaulay produced a work more acceptable to the expanding liberalism of the nineteenth century. These were never forgotten. Mr. Mossner's subject is *le bon David,* a kindly person who, he says "occasionally found friendship and patriotism at war with critical judgment" (xi), a man distinguished by his benevolence to a multitude of less fortunate literary men who desperately needed his help and who always received it; a man who could conduct a controversy without losing his humanity and who overcame the prejudices of his opponents with the charm of a loveable disposition. Mr. Mossner's Hume is more nearly the Hume of Adam Smith when he wrote to the publisher Strahan: "Upon the whole, I have always considered him, both in his lifetime, and since his death, as approaching as nearly to the idea of a perfectly wise and virtuous man, as perhaps the nature of human frailty will admit".

At the same time the book is more than a personal sketch of Hume. It is an interesting and valuable contribution to the history of literature in the Augustan Age, dealing particularly with the group of Scottish writers who, in Edinburgh and under the leadership of Hume, formed the counterpart of Dr. Johnson's circle in London. Mr. Mossner has used a great amount of unpublished material buried among the Hume papers in Edinburgh and elsewhere. The first part of his book (following a reprint of the autobiography) treats of Hume's relationship with a group of Scottish poets: Blacklock, John Home who achieved a passing fame as the author of *Douglas,* William Wilkie, and James Macpherson who as Ossian perpetrated one of the most celebrated frauds in British literature. It was in respect to these poets that Hume allowed his friendship and his patriotic desire for the greatness of Scottish letters to cloud his critical acumen. But no more than Dr. Johnson was he taken in by Ossian. And as Mr. Mossner makes clear, the enthusiasm of Hume's group for a national literature opened the way for the recognition of Scott and Burns in the next generation.

The next part of the book deals with the public controversies in which Hume became involved in spite of his settled habit of avoiding such dissipation. Here the most interesting chapter recounts the celebrated quarrel between Hume and Rousseau which resounded from end to end of Europe. The book culminates very properly with an account of the rivalry, and of the similarities and differences, between Hume and Dr. Johnson. The connecting link between the literary circle in Edinburgh and that in London was James Boswell who passed back and forth between the two and was almost equally fascinated by Hume and by Johnson. As Mr. Mossner suggests, the famous biography might conceivably have had Hume for its subject, had Boswell not lived in the horror of personal extinction by death and had he not been restrained by fear from attaching himself to the most notorious skeptic of the age. Much light has been thrown upon this curious three-sided relationship by the printing of the eighteen volumes of Boswell's *Private Papers from Malahide Castle.*

Mr. Mossner announces his purpose to publish at some future time a full-length portrait of Hume as a man of letters. It is earnestly to be hoped that this purpose will be fulfilled.

GEORGE H. SABINE

CORNELL UNIVERSITY

A New Philosophy and the Philosophical Sciences. By APOSTOLOS MAKRAKIS. Volume One, translated out of the original Greek by DENVER CUMMINGS. Volume Two, translated out of the original Greek by ALBERT GEORGE ALEXANDER. New York, G. P. Putnam's Sons, 1940. Pp. xlviii, 844; xxx, 716.

This enormous work (1635 pages in all) was first published in

modern Greek in Athens during the years 1876, 1883, 1886. The first volume is divided into the following sections: Introduction to Philosophy, Psychology, Logic, Theology, Philosophy; the second volume is devoted exclusively to Ethics. According to the Editors, Makrakis was born in 1831 in one of the Greek islands, and after graduating from a Teacher's Training School, began teaching first in Constantinople and then in Athens. While a young man he commenced teaching and advocating "a new and original view of things, with which the world at large is as yet unacquainted"; in Athens he established a "philosophical and educational institute entitled School of the Logos", in which he expounded his system. "After a span of three years, however, the state closed the school by force and without due process of law, on the pretext that his teachings were subversive of the state religion". Specifically, objection was raised to his doctrine of the tripartite composition of man (body, soul, spirit). He published many works on philosophy, education, and the Christian religion, especially commentaries on the Bible.

Makrakis carried on his career outside the official academic grooves. He never received a diploma in philosophy and never held a position in the Greek National University. The book under review presents a religious and a Christian system of philosophy. The editors and translators are obviously admiring disciples who offer this book to the public from a sense of high duty, and for its power of illumination. Their praise of their master is couched in extravagant terms; he is said to be the author "of the only complete philosophical system ever written"; "philosophy was developed in Greece by Socrates, the greatest of ancient philosophers, and in Greece again it has been sublimed and perfected by Apostolos Makrakis, the greatest of modern philosophers. The philosophical world is no longer obliged to wander about in quest of truth, for the New Philosophical System of Apostolos Makrakis should lead lovers of truth to the discovery of truth and promote the *summum bonum* to which they have been predestined". Though the praise is unmeasured, it is meant sincerely; the disciples are convinced that their master has laid hold of the truth that will save mankind. Nor has the master himself any qualms about the importance of his contribution, referring to it as a "new system of philosophy, which will also be the last, since it is founded on the truth and amply satisfies the soul's philosophical wants"; "it excels in every respect all previous philosophical systems". As I have intimated, the work is an exposition and a defense of the Christian viewpoint; but only another one, better acquainted with patristic writings and Christian theology than the present reviewer, can judge how far the account is original. Certainly it is a comprehensive systematization, so that the believer is provided with the answers to all the relevant questions. Unlike Socrates, however, to whom the author has been

compared by his disciples, Makrakis speaks without a sense of doubt and without hesitation; he speaks dogmatically and without humility. There is controversy, but no real debate. Possibly his experience of having been persecuted by the Greek state and by the state church may have made him, in defense, more assured than he might have otherwise been. Also, of course, he is supporting his views constantly by citations from the Scriptures. Primarily, the tone of dogmatism derives from the fact that the author speaks as a prophet and has a sense of mission and destiny.

It must not be supposed that the author is merely expounding scriptural revelation. His appeal is to reason and to revelation jointly. Indeed he is a rationalist, a believer in 'right reason', for whom philosophy comes after the sciences and does not supersede them. Also he takes a realistic position, in the sense that the mind is able to know a world which is independent of its being known. We begin according to the author with partial knowledge and partial ignorance, and proceed to complete our knowledge by a rational procedure. What we know initially and indubitably is summed up in the following three propositions: (a) 'That I exist'—known by consciousness; (b) 'That the external world exists'—known by sense-perception; (c) 'That God exists'—known by reason. These three are known immediately and simultaneously; we are also told, however, that the existence of God is known by inference from other existing things. Both the soul and material objects are relative, passing and contingent; they necessarily imply the existence of an absolute and eternal being, God, who has created them. Initially we know merely of the *existence* of these three realms; completion of knowledge means to acquire a knowledge of their *nature*. Thus we construct psychology, the natural sciences, and theology. Philosophy is different from these three, having as its object the Logos. In the Logos are contained all the eternal truths, the idea of God, and the ideas of all contingent things. Knowledge is impossible without the Logos which is the very basis of intelligibility. To know is to discover the truths contained in the Logos. Thus, the concept of the Logos is central in the philosophy of Makrakis; and philosophy is central in his classification of the branches of knowledge, and is presupposed by them.

Man's aim and hope are to achieve deification; he seeks the infinite in three forms: to know everything, to live eternally, and to be able to do everything. Man was created in the image of God, and he can fully imitate him. The idea of deification as the supreme end of man is persuasively developed by Makrakis, and constitutes one of his main theses. Of course this is a very controversial topic in theology, in its bearing on the question whether man can be 'sanctified' or not. Makrakis seems to think he can, but he does not seem aware of the other sides to this question and does not discuss them.

In this work, Christian philosophy is presented from the special viewpoint of the tradition of the Greek Orthodox Church. Enemies attacked—besides philosophers like Descartes and Kant—are the Roman Catholic Church and modern sceptics and sophists. It is to the author's credit that he conceives of the Christian religion as something which can be stated in rational terms. Christianity is a philosophy no less than a religion. Often the author explains his ideas by analogies and examples which give life to the text. At the very beginning of his book he makes very good use of Plato's Alcibiades I—a dialogue that deserves much more attention than it has received, for its dramatic and vivid evocation of the interdependence between youthful power and impulse (Alcibiades) and the wisdom of old age (Socrates). A defect of the author is that he is too verbose and his exposition unnecessarily long. The book is printed attractively; the English style in the translation is somewhat heavy, with clumsy expressions here and there; but, given the difficulties, the translators must be said to have performed their task well.

I cannot bring myself to say that the philosophical reader will learn much from this book. Its tone is too dogmatic, its method too disputatious and bellicose, and its contents are hardly original. But perhaps this is to judge it by criteria which are inappropriate; the book is intended to convey a message to all—unlearned as well as learned; "to provide spiritual stimulation"; and it must destroy those doctrines which, because false, are evil. I should like to go on and discuss two broader points that the book illustrates or suggests.

(a) In our elementary courses in the history of philosophy for the college student, we give expositions of Plato and of Stoicism, of Kant and of materialism, but very often none of Christianity. I do not mean the Christian religion but the Christian philosophy. I do not mean evangelical preaching, but a descriptive exposition. We may of course give accounts of great Christian philosophers like Augustine or Aquinas, but what I have in mind is not quite the same; I mean a summing up of the Christian doctrine. My reason for urging the inclusion of Christian philosophy in such courses is that Christianity is an important system both historically and intrinsically. The student, whether he is a professing Christian or not, lives in a world largely moulded by Christian ideas. Also, Christianity as a philosophical system has its own unique elements; Mr. Niebuhr's recent book *The Nature and Destiny of Man* makes this point quite adequately. Of course Christianity has been influenced by other schools, but that is true of every system. There are difficulties to be sure: for instance, *what is* Christianity, is it to be sought for in the writings of the New Testament, in the discussions of the Councils, in the doctrine of the churches (if so, which church), in the views of its great philosophical figures? The difficulties are real but not insuperable. Sometimes the

teacher will have to make arbitrary decisions but not such as will be different in kind from those he has to make in his interpretations of the classical philosophers. Lastly, I know of no simple summary exposition in the printed word of the philosophical elements of Christianity, addressed to the college student who is taking an elementary course in the history of philosophy. I hasten to add that the book under review does not answer the need, not only because it is too ambitious and expanded but chiefly because it is evangelistic in tone. And this brings me to my second point.

(b) The author speaks with 'authority' as a prophet conveying a message, even dogmatically. The philosophical thinker instinctively reacts against this tone and violently so; yet it is quite possible that the general public will respond favorably to this tone and welcome it. There is in the average man the need for "conviction". Is this need to be deprecated? Is it possible that the philosopher himself is dogmatic in rejecting dogmatism outright? Leaving aside the writer's missionary and evangelistic attitude, let us concentrate on his accent on dogmatism and conviction (later on, I will distinguish these two). The philosopher who deprecates dogmatism, more often than not, has his own dogmatic beliefs. Professionally he may doubt the evidence for the existence of the external world, but as a man he is certain of its existence; whatever the range of his philosophical scepticism, he accepts commonsense and lives by it. I will call the second kind 'belief' (in quotation marks) in order to distinguish it from the other which I will designate as academic belief or belief simply. The difference I have in mind is illustrated by Hume: in his *Treatise* Hume states that he has no evidence that one billiard ball acts on another; also (in so many words) that he has no evidence that in the future the hitting of one ball by another will be followed (as a mere matter of sequence) by the motion of the first; yet when he gets unpleasantly depressed over his scepticism, he goes and plays billiards with his friends in order to revive his spirits. By 'belief' I mean the belief which one has as a living being in his everyday practice; I might just as well have called it practical belief, to mean, not belief *useful for* practice, but belief *held in* practice. Such belief is identified by its context, not its content; for instance, ethical belief, or 'philosophy of life', may be merely academic, whereas an abstract metaphysical statement may be really 'believed'; consider, for instance, the law of dialectic as held by the Marxians, *not* by the Hegelians. A scientist professing determinism still in his daily life gets angry if insulted, and praises and blames his fellowmen. A solipsist beams at or quarrels with other people. A subjectivist in ethics, reducing moral judgments to meaningless statements or to ejaculations of feelings, will be found to characterize as wrong the treatment meted out to the cause of the Spanish Loyalists by the Allies. Another one, declaring himself

satisfied with the arguments for the existence of a personal and providential and good God, nevertheless makes no effort in his daily life to take account of such a God. Such cases of inconsistency between what a philosopher believes and what the man 'believes' tend to discredit philosophy and to lend support of the cynical description of metaphysics as verbal or as meaningless. We are really dealing with a moral problem, and with the moral value of harmony in the "inner city"—the harmony between academic and real belief. Perhaps the distinction I have in mind may be stated simply as one between actual belief and a belief that one does not have but believes one has. Perhaps the Socratic elenchus should be revised to apply not to the man in the street but to the professing philosopher; and to consist in purging oneself of all those beliefs which one does not have.

Actual 'beliefs' are usually implicit, unformulated, uncoördinated; conversely, explicit and systematic doctrine is apt to be academic. Not always of course; sometimes there emerges a systematic and formulated doctrine with all the force of conviction usually reserved for our unconscious living faiths. Such a doctrine speaks with 'authority' and is characterized by what the ancients called 'certainty'; it penetrates beyond the academic play of mind, breaks through the crusts of habit, and becomes a part of man's being. Such a doctrine I would describe as religious—using this term to refer not to the content of the belief but to the harmony of belief with the man. Among the classical philosophers it seems to me that Plato is prophetic and religious, whereas Aristotle is academic. In this sense too, the book under review is religious, quite apart from the fact that it expounds a theological system; I mean that it is credible—one can 'believe' it or 'disbelieve' it; it has the note of conviction.

Traditionally conviction and certainty have been used to indicate a certain intensity of belief taken as a psychological fact. But I have employed these words in an ontological sense, to denote the real existence of belief as contrasted with the illusory appearance of belief: also, I have suggested that the importance of the contrast is moral or valuational. Obviously, the requirement of real existence for a belief is not enough; the belief must be true. The false prophets are many; one must have recourse to philosophical investigation and criticism in order to make a proper choice. Thus, conviction need not and should not be dogmatic (as it is dogmatic with Makrakis). The function of philosophic doubt is to destroy the dogmatism of implicit 'belief' and to achieve a coherent doctrine which is both explicit and rational and is also really believed in practice. But is it not impossible to retain or reach 'belief' through rational inquiry; is not genuine conviction which penetrates and 'cleanses the inner parts' of man, obtainable only through faith, whether animal or spiritual? To maintain such a view is to abandon hope both about reason and about

man. Plato had faith in the power of reflection to attain 'belief'; his dialogues create doubt concerning a great many items of commonsense; yet while questioning, he also affirms. Conviction can be knowledge; and knowledge must be conviction. All this may seem a far cry from Makrakis; but I have thought it would not be fair to condemn him for his lack of those values of self-criticism which the philosophers prize, without setting up the whole structure of the values of the philosophical quest—a structure consisting at once of intellectual virtue and of moral virtue, and also of the harmony of the two, which is the virtue of inner justice.

RAPHAEL DEMOS
HARVARD UNIVERSITY

Sociology of Law. By GEORGES GURVITCH. New York, Philosophical Library and Alliance Book Corporation, 1942. Pp. xx, 309.

Several of the French books of Professor Gurvitch, formerly of the University of Strasbourg (France) and now with the New School for Social Research in New York, dealt with the idea and history of a social law and its relation to morals and philosophy. The special purpose of the present volume is a justification of the sociology of law as a discipline distinct from jurisprudence and sociology, a definition of this separate science in all its aspects, and a formulation of its methodology, its object and its main problems. The book's introductory chapter on the object and problems of the sociology of law (1-67) deals with these matters and defines the sociology of law as "that branch of the sociology of the human spirit which studies the full social reality of law" (61). As described in this chapter, the object of this discipline is the interpretation according to inner meanings of the real and ideal, the tangible and intangible, levels and manifestations of law, *i.e.*, of the jural facts constituting the social reality of law. The chapter also outlines the procedure to be followed in interpreting jural data such as the material basis of law, effective collective behavior, jural symbolic patterns, jural symbols, values, ideas or ideals, and collective jural mentalities, beliefs or intuitions. The main problems of the sociology of law with reference to the experience of all societies and all groups are said to be three: first, a study of the manifestation of law as a function of the forms of sociality and of the levels of social reality; secondly, law as a function of real collective units; and thirdly, regularities as tendencies and factors of the change, development and decay of the law within a particular type of all-inclusive society (*cf.* 61 f.). But before he discusses these problems of legal sociology, Professor Gurvitch takes up the forerunners and founders of the sociology of law (I, 68-197). His aim here is to clarify the theoretical exposition of the preceding chapter and to point out the partial character of previous studies in this field. The second, third, fourth, and fifth chapters (198-303) return to the dis-

cussion of the problems of the sociology of law as here understood. These chapters are devoted, first, to the systematic sociology of law, of microsociology of law (II), whose particular subject-matter are the quasi-infinite variety of "kinds of law" engendered by horizontal and vertical forms of sociality and levels of social reality and the "functional relationship between social reality and kinds of law" (198). Next, they are concerned with differential sociology of law subdivided into a jural typology of particular groupings (III) and a legal typology of all-inclusive societies (IV). The special objects of the typology of groups are the functional "frameworks of law" produced by "real collective units", such as the functional or territorial groups in a society, and the relation of these frameworks of law to the totality of jural reality in a given society. The typology of societies examines the "systems of law" characteristic of all-inclusive societies or "total social phenomena", such as primitive, feudal, or capitalistic society. The last of these chapters on the problems of legal sociology (V) discusses genetic sociology of law. It denies progress as a continuous process in legal evolution, and with the aid of a dynamic macrosociology of law it analyzes regularities as indicative of tendencies of change within a type of legal system and the intrinsic and extrinsic factors, not causes, of change within a system of law. A short concluding chapter (304-309) explains the relation between sociology of law and philosophy of law. This matter and the relation between legal sociology and jurisprudence are mentioned also in the introductory chapter (*cf.* 49 f.) and in the instructive preface to the volume by Dean Roscoe Pound (vii-xv). The chief aim of the latter is to introduce the book's subject-matter to the American reader and to explain particularly the different but related purposes of the legal sociologist and the jurist and the meanings attached by them to the term "law" and to the relation between law and the state.

Professor Gurvitch's *Sociology of Law* undoubtedly represents a valuable contribution to the scope and methodology of this discipline. It appraises fully and utilizes the results of previous studies in this field. It selects from them and synthesizes those aspects which fit into the author's integrated whole. Nevertheless, as the last chapter of the book indicates, acceptance of the method of Professor Gurvitch and of its conclusions depends essentially on agreement with its basic points of view and their underlying assumptions. Its admitted ideal-realist philosophy (*cf., e.g.,* 189), for example, results in a *verstehende* or rationalistic rather than an empirical sociology of law. It looks upon the jural fact, or social reality of law, neither as an immediate datum of intuition nor as a content of sense perception but as a construct of reason detached by it from social reality as a total phenomenon (*cf.* 52). For this reason, Professor Gurvitch not only

accepts the reality of groups as independent units but also seems to look upon conceptual entities, such as collective psyche or mind, as independent, law-productive forces apart from the individuals composing a social group (*cf., e.g.,* 26, 44 f., 47, 128 f., 144 f., 301 f.). Similarly, his concept of the total normative structure of a society as an extremely pluralistic universe of social regulatory or right-patterns (normative simply because factual regulations backed by social guaranties and not because reflective of justice as a philosophical ideal) treats the law of the state as but "the most rigid and superficial level of jural reality" (226) or as but one of "at least" 126 kinds of law (*cf.* 230). On the same basis, the state itself is reduced to one of the law-acknowledging agencies of a society and the state's monopoly of coercive sanctions is deemed subordinate to the social guaranties of law just as its political sovereignty gives way to the jural sovereignty of a framework of law, such as the law of the church in the middle ages or, as at present, the law of international society, whose primacy appears to be determined solely by the criterion of spatial extent (*cf.* 250-256). However, these or similar issues in Professor Gurvitch's latest volume merely emphasize the controversial nature of the subject. They can only stimulate further research and advances in this discipline and do not detract from his extremely comprehensive and constructive statement of the nature, object and problems of the sociology of law. But if the book is reprinted, its form could be improved by elimination of its fairly frequent typographical and reader's errors. This reviewer counted 39 such errors or one for about every 8 pages of the volume (*cf.* pp. 7, n. 1; 15; 28; 37; 57; 63; 71; 91; 96; 100; 105, n. 1; 121; 128; 138; 150; 152; 154; 173; 190, n. 1; 197; 209; 217; 240; 256; 263; 266; 273; 277; 288; 291; 296, and 307, with one or two errors each). A bad misprint occurs, for example, on p. 71 where 17 lines precede the 11 lines which should be placed before them, and on pp. 63, 96, and 288, where the word "status" appears either as "statue" or "statute" in Maine's phrase concerning the progress of society from "status to contract".

GEORGE MANNER

UNIVERSITY OF ILLINOIS

Essays in Thomism. Edited by R. E. BRENNAN. New York, Sheed and Ward, 1942. Pp. vii, 427.

In an introductory article, Father Brennan presents, with a certain amount of restraint, the importance of St. Thomas as a philosopher and as a man, and of the return to his philosophy in recent years. He wisely reminds us of the practical aim of St. Thomas and indeed of his contemporaries, "to rear up honest and courageous, wise and energetic men for the service of the Church militant". An apparent contradiction occurs when the author offers a somewhat exaggerated

condemnation of philosophies other than Thomistic and at the same time asserts that "seeds of truth are scattered over the face of the earth".

"Reflections on Necessity and Contingency", by Jacques Maritain, is the first essay. Contingent facts are necessitated on the supposition of their antecedents, "but the antecedents themselves, not having derived from a cause or essential structure which by itself required them, could have been different from what they actually were" (30). In the light of this definition, Maritain presents an interesting classification of events, from those absolutely necessitated exemplified in geometry, to those imperfectly assured by the cause preordained to produce them exemplified in the blossoming of a hazel tree, and finally to those events in no way necessitated, free human choices. According to this classification, "the collection of causes" necessitating in fact an event of nature "constitutes a family or republic of natures".

The third and fourth essays, "Intellectual Cognition" by Rudolf Allers and "The Problem of Truth" by John K. Ryan, are lucid expositions of these two themes presented in modern terminology. Professor Allers is particularly happy in his transcription of St. Thomas' epistemology into terms used currently.

Hilary Carpenter's "The Ontological Roots of Thomism" is largely a statement, in language more obscure than that of St. Thomas, of the meaning of the transcendentals, *ens, unitas, bonum, etc.* The next essay, "The Role of Habitus in the Thomastic Metaphysics of Potency and Act" by Vernon J. Burke, is an excellent essay. Habitus is a potency having the following three characteristics. (1) When actuated, a habitus is not determined to one and only one operation, but can act in various ways, either good or bad. (2) What is produced in such a potency, when actuated, is a quality that remains after the period of actuation has ceased. (3) Within limits, a habitus controls its own operations. Thus, the intellect acquires a habitus in the sense that such habituation becomes the performance of intellectual operations that are enjoyable to the agent, quick in their execution and easily done. Hence, *habitus medio modo se habet inter potentiam et actum purum.*

"The Nature of the Angels" by John O. Riedl is a thorough analysis of St. Thomas' *De Substantiis Separatis,* a treatise important for understanding the position of St. Thomas as distinct from that of Platonism and of Averroism on this subject.

The essay entitled "The Dilemma of Being and Unity" by A. C. Pegis deserves extended mention. So far as can be detected from the confused and repetitious style of the author, the argument seems to run as follows. The dilemma consists in these two statements: Being to be intelligible must be diverse; Being to be a unity cannot be intelligible. Plato renders being intelligible by diversifying it through

the Forms. Plotinus maintains its unity by submerging all plurality in the indistinguishable and hence unintelligible One. The problem is to devise a position that will satisfy the demands of both unity and intelligibility. The tradition of Realism in the Middle Ages tried to answer by positing Divine essences, ideas or universals in the mind of God. If such essences are not creatures, but of God's essence, then they introduce plurality into God's mind and consequently destroy the simplicity of his Being.

William of Ockham, a representative of consistent Nominalism, is aware of this conflict of Being and Unity as it appears within the Platonic metaphysics. His solution is to deny the reality of universals. Professor Pegis quotes numerous passages presenting Ockham's attack on any form of the view that universals are real. If any such entity exists *extra animam*, it must, for Ockham, be singular. What, now, is Ockham's view of the Divine ideas? They can only be creatures dependent on an omnipotent will that is embarrassingly free.

The correct solution to the problem, so far as Professor Pegis can be understood, consists of the following statements. The multiplicity of Divine Ideas is equivalent somehow to Divine unity. "Multiplicity belongs to them alone and their common foundation lies in the unity of God and His Word; seen from the side of God, the ideas become identified in a single reality which is none other than the Divine essence" (175). But how is this multiplicity compatible with Divine simplicity? St. Thomas answers: God knows his own essence perfectly, and this means that He knows it in all the ways in which it is knowable. The Divine essence, therefore, is known not only as it is in itself but also as creatures can participate in it. Thus, God knows His own essence in so far as He knows every way in which His perfection is capable of being participated in. Hence, He knows the essence and idea of every creature, and consequently, all ways of existing. The only way God can know things in this manner is in the act of Creation. God is Being and One, produced beings are creatures because production means the production of being. Such appears to be the final solution which Professor Pegis occasionally calls a "revolution" and regards as peculiar to St. Thomas. This reviewer hopes, perhaps vainly, some day to understand this alleged important difference between St. Thomas' philosophy and apparently all other scholastic and non-scholastic philosophies, a difference that the author has hinted at in several previously published essays.

"Prudence, the Incommunicable Wisdom", by Charles J. O'Neil, is an interesting exposition. "The life of virtue consists in virtuous doing. . . . The very constancy and immutability of first principles *prevent* their being of immediate usefulness" (192). Hence prudence is necessary to determine what is to be done in particular cases; it helps the virtues, *e.g.*, justice, to their end. It is a "habitus" of the kind

described in Father Burke's essay. Finally, prudence is incommunicable, for "the human individual has only his own native ability and experience to sharpen his intuition of the practical situation" (203).

There is, of course, an article by Mortimer J. Adler entitled "A Question about Law". Burdened with distinctions, "precisions", elaborations, repetitions and references, the argument appears finally to conclude that the word "law" is used in some sense equivocally or analogically in speaking of natural law and of human law. With true Adlerian helpfulness, the author intimates that a complete understanding of this article depends on the projected publication of a book about analogy (211).

With relief, one turns to the exposition of "The Economic Philosophy of St. Thomas" by Mons. John A. Ryan. The author presents, with his customary clarity, the views of St. Thomas on such matters as private ownership, just price and just wage, usury, all of which are decidedly of contemporary interest.

"Beyond the Crisis of Liberalism" by Yves Simon shows the historical and logical connection between liberalism and indifferentism, an indifferentism directed particularly towards moral and religious principles. If we are to proceed beyond the crisis of liberalism, some method of reviving the loyalties of man to fixed principles of justice and freedom must be devised. The duty of a philosopher in this connection is study and direct a "liberation myth", a "myth" of such a nature that renews "the intercourse between the spontaneity of social organisms and the reflective organization of rational truth" (285).

In "The Fate of Representative Government" by Walter Farrell, the author examines the intrinsic and extrinsic threats to such government, and concludes that no intrinsic threat is apparent. The next essay, "The Thomistic Concept of Education", by Robert Slavin, repeats the familiar criticism of secular and "positivistic" education, and counsels a return to Christian education. The last essay, "The Perennial Theme of Art and Beauty" by Emmanuel Chapman, in which the utterances of James Joyce are introduced to explain the notions of *integritas* and *claritas*, is written in an esoteric style unfamiliar to this reviewer.

J. R. Cresswell

West Virginia University

DESCRIPTIVE NOTICES

Pragmatism, a New Name for Some Old Ways of Thinking, together with four related essays from The Meaning of Truth. By WILLIAM JAMES. New York, London, and Toronto, Longmans, Green and Company, 1943. Pp. xv, 426.

Essays in Radical Empiricism. A Pluralistic Universe. By WILLIAM JAMES. New York, London, and Toronto, Longmans, Green, and Company, 1943. Pp. xi, 233; 361.

Essays on Faith and Morals. By WILLIAM JAMES. Selected by RALPH BARTON PERRY from volumes originally entitled *The Will to Believe and Other Essays in Popular Philosophy; Talks to Teachers on Psychology, and to Students on Some of Life's Ideals; Memories and Studies.* New York, London, and Toronto, Longmans, Green, and Company, 1943. Pp. ix, 341.

The three volumes listed above are all reprints of the original editions, the first two apparently from the same plates, the third reset but textually unchanged. In each there is a brief editorial note by Professor Ralph Barton Perry. *Pragmatism* is reproduced entire with the same pagination. To it are added James's Preface to *The Meaning of Truth* and the first three essays of that volume: "The Function of Cognition", "The Tigers in India", and "Humanism and Truth". The pages of these essays have been renumbered to follow *Pragmatism,* thus creating a real, though perhaps not a very serious, risk of confusion in citation. A new index to the whole volume has been added.

The second volume listed makes two volumes in one, paged separately and for the most part identically with the original editions. Of the twelve papers originally published as *Essays in Radical Empiricism,* the first eight are here reproduced and the last four omitted as being, in the editor's judgment, controversial or immature. The body of *A Pluralistic Universe* is reproduced entire but the two essays which were published as Appendices A and B ("The Thing and Its Relations" and "The Experience of Activity") are omitted because they are contained in *Essays in Radical Empiricism,* where they had been reprinted after James's death. "On the Notion of Reality as Changing", which was originally Appendix C, now remains as the sole appendix to *A Pluralistic Universe,* repaged to follow the notes to that work.

The title *Essays on Faith and Morals* has been adopted by the editor for a selection of James's essays on ethics. The volume contains the first six essays from *The Will to Believe:* "Is Life Worth Living?", "The Will to Believe", "The Sentiment of Rationality", "Reflex Action and Theism", "The Dilemma of Determinism", and "The Moral Philosopher and the Moral Life", the remaining four essays of that volume being omitted. The new selection contains also the three "talks to students" which formed the second part of *Talks to Teachers on Psychology, and to Students on Some of Life's Ideals:* "The Gospel of Relaxation", "On a Certain Blindness in Human Beings", and "What Makes Life Significant?" It contains also "The Energies of Men" and "The Moral Equivalent of War" which were

collected posthumously in *Memories and Studies*, and finally it reproduces as an appendix James's Preface to *The Will to Believe*.

George H. Sabine

Cornell University

The Origin of Dewey's Instrumentalism. By Morton G. White. New York, Morningside Heights, Columbia University Press, 1943. Pp. xvi, 162.

This essay (the first to be awarded the Woodbridge Prize in Philosophy) is a scholarly chronicle for the specialists of the intellectual influences under which John Dewey abandoned his original Hegelianism and developed the "instrumentalist" view that today we associate with his name. Dr. White gives us a lively description of the American philosophical scene at the time when Dewey began his career, and he introduces us to the men at Johns Hopkins who determined the direction of Dewey's earliest thought: the Hegelian G. S. Morris and the experimental psychologist G. S. Hall. It is shown how the original thesis and antithesis in Dewey's thinking that these two names signify are slowly integrated into the synthesis of instrumentalism. Both the change and the continuity in Dewey's thought are clearly brought out. The Hegelian organic unity of subject and object within the "universal consciousness" of Dewey's early years is traced in the organic unity of human and nonhuman things and the unity of individual and society that Dewey speaks of from his mature standpoint—now, however, with a Darwinian and sociological rather than a metaphysical emphasis.

Dr. White writes with a life and vigor that make his book read almost like an intellectual drama, in spite of the complicated nature of its subject-matter. The main difficulty that the historian is up against lies in the very elusiveness of Dewey's "instrumentalism" which seems to defy all attempts to catch it in the nets of precisely formulated statements. Perhaps, ultimately, Dewey's "instrumentalism" is a frame of mind, or a mood, rather than a theory—something which Dr. White, without saying it in so many words, shows by the subtler and yet more effective means of the objective historian.

Anders Wedberg

Stockholm

Aristotle and Anglican Religious Thought. By Victor Lyle Dowdell. Ithaca, New York, Cornell University Press, 1942. Pp. xii, 104.

This little book comprises the Bohlen Lectures for 1941. The author's purpose is "to examine the body of Anglican divinity, to see the touch of Aristotle, and to exhibit the signs of his influence in representative thinkers of the Church of England". Mr. Dowdell's initial chapters include such titles as "Scientific Theology" and "Aristotle's Spirituality". The general treatment of this introductory material is obscure, and its contribution to the author's stated undertaking is not at all evident. With the account of the study of Aristotle by Anglican divines Mr. Dowdell's discussion is more successful. Covering the period from the 16th century to the present, the author shows that numerous figures within the church were acquainted

with Aristotle directly or through secondary sources. His procedure is largely one of indicating the Aristotelian sources to which the individuals turned. It is one primarily of exhibiting the number of Aristotelian quotations or references in a man's work with but little comment upon the effect of Aristotle on the person's thought. Information about the Aristotelian books read by the Anglican clergy is interesting and important, and Mr. Dowdell is obviously widely informed on such matters. In the light of his original purpose, however, he has carried this kind of exposition to a fault. To show that a number of individuals in the Anglican tradition have read Aristotle does not indicate the nature of his "touch" upon Anglican theology or influence upon the readers. Mr. Dowdell has done much preliminary work for his task, but a clear statement of Aristotle's influence upon Anglican theology is not found in his present production.

HAROLD D. HANTZ

UNIVERSITY OF MISSISSIPPI

From Beast-Machine to Man-Machine. By LEONORA COHEN ROSENFIELD. New York, Oxford University Press, 1941. Pp. xxviii, 354.

The developments in French thought from Descartes' theory of a beast-machine to the time of Lamettrie's man-machine form an important contribution to the mechanist-vitalist controversy. Descartes' views attained the greatest vogue among savants about 1690. His critics, the traditionalists and empiricists became very powerful after 1700. Both favoured the doctrine of an animal soul inferior to man's; the traditionalist opposition to animal mechanism was motivated by theology; the empiricists wished to substitute a physiological definition of soul for Cartesian intellectualising. One literary result of the controversy, the writer points out, is that Voltaire's humanitarian humor contributes in no small degree to the success of the empiricists.

ROBERT JAQUES

ST. CATHARINE'S, CANADA

A Companion to the Summa: Part IV. *The Way of Life.* By WALTER FARRELL, O. P. New York, Sheed and Ward, 1942. Pp. viii, 455.

This is a presentation "in the modern idiom" of Part III of the *Summa.* "The modern idiom" apparently consists of strained illustrations, rather heavy humor, and, in some passages, showy rhetoric. In spite of these defects, the volume gives a pretty clear exposition of the Incarnation, the nature of Christ, and other doctrinal mysteries.

J. R. CRESSWELL

WEST VIRGINIA UNIVERSITY

A Primer of Formal Logic. By JOHN C. COOLEY. New York, The Macmillan Company, 1942. Pp. xii, 378.

This careful and lucid exposition of the elements of modern logic takes its place beside the best of the already available English language textbooks on the subject (Lewis and Langford, Tarski, Quine). After introducing the concept of logical form and validity of inference in Ch. I, the book presents the theory of truth-functional inference in Chs. II and III. Chs. IV and V

outline what German writers sometimes call "the extended predicate calculus", *i.e.*, a system with object and predicate variables, the notion of identity of objects and quantification of object variables. Ch. V also introduces the important technique of conditional proofs, a topic often omitted in elementary texts, and the concept of descriptions. In Ch. VI the student is made acquainted with the axiomatic method of developing logic. The author chooses a system of fifteen postulates and five rules of inference, with a view to pedagogy rather than axiomatic economy. Ch. VII explains the various kinds of numbers (natural numbers, integers, fractions, real numbers), gives a postulate set for real numbers (essentially that of Tarski's *Introduction to Mathematical Logic*) and then shows how the "higher" kinds of numbers can all be "constructed" on the basis of the natural numbers. Peano's postulates are stated, and the author even finds place for introducing Frege's method of dispensing with recursive definitions. The large Ch. VII winds up with an outlook into the Frege-Russell class definition of the natural numbers. The final Ch. VIII—which is somewhat of the nature of an appendix—presents the Aristotelian theory of the immediate inferences and the syllogism. The book takes the student through a very large field of modern logical theory, though it presupposes only the most rudimentary previous knowledge of mathematics and none at all of logic. The rich collection of carefully chosen exercises enhance the value of the book which seems excellently suited as a basis for elementary courses.

A. WEDBERG

STOCKHOLM

The Wisdom of China and India. Edited by LIN YU TANG. New York, Random House, 1942. Pp. xiii, 1104.

Lin Yu Tang has done English-speaking readers a splendid service by compiling this volume. Here are eleven hundred pages of selections from the literature of these two countries, including fables, anecdotes, letters, wit, and romantic poetry as well as a number of the religious, moral, dramatic, and political classics with which the Western world is more familiar. The book is attractively printed and available at a low price. Lin Yu Tang himself has made new translations of some of the Chinese classics included; his translation of the difficult and compact *Tao Teh King* of Lao Tze being already pronounced by some Chinese scholars far superior to any of the translations previously available. Many Western readers will gain a new understanding of the Indian mind, when they read the fables of Panchatantra and *The Enchanted Parrot;* they will discover a novel and appealing insight into Chinese life from *Six Chapters of a Floating Life.*

Questions can of course be raised about some of the editor's decisions. Sir Edwin Arnold's *Light of Asia,* for example, however charming as a biography of Buddhā, is hardly in strictness a part of Indian literature.

E. A. BURTT

CORNELL UNIVERSITY

Roots of Bergson's Philosophy. By BEN-AMI SCHARFSTEIN. New York, Columbia University Press, 1943. Pp. viii, 156.

The aim of this study is a limited one. It is to inquire into the historical

antecedents of Bergson's "view of time, his theory of intuition, his psychology, his biology, and his morality and religion" within the limits of "the immediate scientific and philosophic environs of Bergsonism" (5, 6). A more comprehensive survey, dealing with the "sociological factors that may be called roots of Bergson's philosophy", is promised in a later study. On the basis of the present investigation, the author concludes that, though there are novel ideas in Bergson's system, "Bergson had no great share in originating any of the points he considered focal, except perhaps in *Matter and Memory*. His 'originality' is a gift for synthesizing the theories of other persons. . . . His thought mirrors the culture that was its source, as the clear river mirrors the land in which it rises and through which it flows" (138). This conclusion is thoroughly documented within the limits above indicated, and a more comprehensive survey would doubtless furnish further warrant for it. It is, of course, a hard saying for any who may still be prone to embrace the enthusiasms of the earlier disciples of *la philosophie nouvelle;* but it does not in the slightest detract from Bergson's importance as a philosopher. The question remains, however, whether he is as genuinely "of a piece" as the author suggests; the fact that his thought has roots in both mysticism and science and that, as he stated in his will, he would have become a convert to Roman Catholicism except for the purely personal consideration that he "wanted to remain among those who tomorrow will be persecuted" gives point to the question.

G. Watts Cunningham

Cornell University

Religion in Soviet Russia, 1917-1942. By N. S. Timasheff. New York, Sheed and Ward, 1942. Pp. xvi, 172.

Professor Timasheff's book is a restatement of the case of the Church against Soviet Russia's religious policy over the last twenty-five years. More specifically, it is the case of the Roman Catholic Church against Communism rather than that of the Russian Orthodox Church. As a piece of religious propaganda, the book is an able performance, but it can hardly be considered a purely objective study of a highly controversial subject. The author left Russia in 1921, and hence for twenty-one years of the period covered by his investigation he has been obliged to depend on evidence derived from sources which in many cases were biased. We have long since learned to distrust broad statements, such as priests "were exiled or executed in thousands" (39), which are based on entirely unauthenticated material coming out of Soviet Russia. Scholarship can never be too exacting when the object is to indict a whole government for its repudiation of religion. If the author's serious charges against the Soviet Government for its persecution of religion are true, then recent statements and acts of Soviet ecclesiastical authorities are the most arrant hypocrisy. The only other possibility is that the author's conclusions are quite erroneous. For the Metropolitan Sergei of Moscow and the Metropolitan Nikolai of Kiev have recently made public statements, in which Stalin has been praised as a "God-chosen leader"; the "enemies of the Soviet order among leaders of the Russian Orthodox Church who infringed the holy law" have been condemned; and the Soviet Government extolled because—to quote the Metropolitan Sergei of Moscow—"there has

never yet been a case in the Soviet Union when anyone suffered for his Orthodox faith, for preaching the teachings of Christ". (See *Information Bulletin*, Embassy of the U.S.S.R., No. 17, 138, 1942.)

ERNEST J. SIMMONS

CORNELL UNIVERSITY

Philosophy for the Millions. By J. A. MCWILLIAMS. New York, The Macmillan Co., 1942. Pp. vii, 206.

Conspectus Cosmologiae. By J. A. MCWILLIAMS. St. Louis, The Modern Schoolman, 1942. Pp. 71.

The first of these two volumes opens with a clear statement of the traditional view of scholasticism. If philosophy is an attempt to map reality, then there is ideally only one true philosophy. If reason is adequate to comprehend reality, then some rational statements about reality must be true. If the Christian revelation provides some absolutely certain knowledge about reality, then it can be used, at least as a negative test for the truth of rationally attained statements, if not also as a positive guide for reason. The acceptance of the three antecedents of these hypothetical statements constitutes the starting point of scholasticism. The succeeding sections on the social, the spiritual, and the record or history of philosophy, are too brief to be enlightening and exhibit a decided tendency towards dogmatism.

The second volume is a useful survey of scholastic cosmology. Philosophic monism, materialism and atomism are refuted, hylemorphism established, and the creation of the world maintained; all done with neat dispatch and in lucid Latin.

J. R. CRESSWELL

WEST VIRGINIA UNIVERSITY

St. Thomas and the Problem of Evil. By JACQUES MARITAIN. Milwaukee, Marquette University Press, 1942. Pp. 46. (The Aquinas Lectures, 1942.)

The problem of evil is a mystery "resolved . . . only in the darkness of faith". M. Maritain's style does little to dispel the obscurity. Somehow the following statements are to be reconciled: all being is good, evil is the absence of being, evil exists, evil works through good, evil is a metaphysical monstrosity. In reconciling them, there is always a danger of falling into the easy dismissal of evil by saying that evil is a discord, or a necessary element, in the perfection of the world, for "perfection requires that all degrees of being and of goodness be filled". His final assertion that nonconsideration of a rational rule is the cause of evil in free human action is intended, I presume, to escape easy optimism and to reconcile the previous statements about evil. All devout theistic philosophers have reasoned obscurely and inconclusively about this problem, and, in that respect, the present author is no different.

J. R. CRESSWELL

WEST VIRGINIA UNIVERSITY

L'engagement à l'être. Essai sur la signification de la connaissance. By A. M. DE CRAENE. Bruges, Desclée de Brouwer, 1941. Pp. 129.

This essay in epistemology attempts to show that the act of knowing

involves the mind in a kind of participation in the reality of the object. The act is in some sense a "constitutive identification" of mind and object. This identification is an imitation of the identity in God's mind. It is not an illuminating essay.

J. R. CRESSWELL

WEST VIRGINIA UNIVERSITY

The Christian Philosophy of History. By SHIRLEY JACKSON CASE. Chicago, The University of Chicago Press, 1943. Pp. viii, 222.

Under this title—reminiscent of the bad habits of modernist theologians—Dean Case discusses with his usual clarity and penetration the questions: What is the essential nature of historical process? and What can religion contribute to its understanding? The first four chapters expound, with some critical evaluation, views of history that have been widely held in Christendom in the past or are competing for adherents in the present. The fifth, sixth, and seventh chapters outline the author's own answers to certain major aspects of these problems. His treatment of "The Continuity of History" is especially salutary reading for those who are so overwhelmed by the present world catastrophe that they greatly exaggerate the role of crisis in their view of history as a whole.

E. A. BURTT

CORNELL UNIVERSITY

Learning and Living. Proceedings of an Anniversary Celebration in Honor of Alexander Meiklejohn, Chicago, May 8-10, 1942. Edited by WALKER H. HILL. Published by the editor, 5835 Kimbark Avenue, Chicago, Illinois. Pp. xiv, 124.

The contents of this "planographic" pamphlet are divided in three parts. The first is a symposium on "The Role of the Liberal Arts College in American Life". After a brief introduction by President Hutchins of the University of Chicago, papers are presented by President Dexter M. Keezer of Reed College, Dean Scott Buchanan of St. John's College and Dr. Meikeljohn. The keynote of these papers is teaching rather than instruction, with emphasis upon community life, principles of thought and action, rather than upon knowledge of subject-matter. Dr. Meikeljohn's own paper is a résumé of his recent book, "Education Between Two Worlds" (above, p. 518). Part II, entitled "How Do I Fit In?" consists of nine brief statements by former students of the University of Wisconsin "Experimental College", in which attempts are made to show how the present experience of these men of diverse calling seems to reflect their training in the college. To most of these contributors the question seems to have been somewhat awkwardly phrased; for the answers show little congruity, save the recollection of a majority that some books by Henry Adams were read. Part III records the Alumni Reunion Dinner Program which includes a statistical report of present occupations, salaries, etc. of about half the 327 students who attended the college. Perhaps the most interesting result of this analysis is that "approximately forty-five per cent of the men responding reported having done some type of writing since leaving college". Though lacking a basis of comparison with similar results from alumni

groups of other colleges, it might yet appear that the product of Alexander Meiklejohn's Experimental College is to a gratifying degree literate.

R. M. OGDEN

CORNELL UNIVERSITY

The following books have been received:

Experiments in Education. By LANE COOPER. Ithaca, New York, Cornell University Press, 1943. Pp. x, 176. (London: Humphrey Milford, Oxford University Press.)

Finite and Infinite. A Philosophical Essay. By AUSTIN FARRER, Westminster, The Dacre Press, 1943. Pp. xii, 300.

The Policy of Neutrality and the Practical Alternative. By A. J. JACOBS. Cape Town, England, Cape Times, Ltd., n.d. Pp. 320.

Principles of Systematic Psychology. By COLEMAN R. GRIFFITH. Urbana, Illinois, University of Illinois Press, 1943. Pp. xvi, 718.

The Aesthetic Process. By BERTRAM MORRIS. Evanston, Northwestern University, 1943. Pp. x, 190.

Humanism and Theology. By WERNER JAEGER. Milwaukee, Marquette University Press, 1943. Pp. viii, 88. (The Aquinas Lecture, 1943.)

The Foundation of Phenomenology. Edmund Husserl and the Quest for a Rigorous Science of Philosophy. By MARVIN FARBER. Cambridge, Massachusetts, Harvard University Press, 1943. Pp. xii, 586.

The Expression of Personality. Experimental Depth Psychology. By WERNER WOLFF. New York and London, Harper & Brothers, Publishers, 1943. Pp. xiv, 334.

Religion of Tomorrow. By JOHN ELOF BOODIN. New York, Philosophical Library, 1943. Pp. 189.

Papers from the Second American Congress on General Semantics, University of Denver, August, 1941. Non-Aristotelian Methodology (Applied) for Sanity in Our Time. Compiled and Edited by M. KENDIG. Chicago, Institute of General Semantics, 1943. Pp. xxiv, 581; 12.

NOTES

The following is a list of articles in current philosophical periodicals:

MIND LII 207: *John Wisdom.* Other Minds (VII); *Morton G. White,* Historical Explanation: *Everett W. Hall,* The Extra-Linguistic Reference of Language (1); *A. A. Luce,* Berkeley's Essays in the *Guardian.*

PHILOSOPHY XVIII 70: *H. M. Conacher,* The Later Thought of Plato; *Reginald Jackson,* Bishop Butler's Refutation of Psychological Hedonism; *John Laird,* Shakespeare on the Wars of England; *H. Kalmus,* Separation and Reintegration as Phases of Evolution; *K. J. Neumann,* Tyranny and Group Loyalties. Supplement to "Philosophy" 1943: *E. Toms,* The Principles of Implication.

THE JOURNAL OF PHILOSOPHY XL 14: *William Curtis Swabey,* Non-Normative Utilitarianism; *Richard A. Littman,* A Reply to Professor Mandelbaum's Note. 15: *Elizabeth Lane Beardsley,* The Semantical Aspect of Sentences; *Ralph B. Winn,* Our Pre-Copernican Notion of Time. 16: *Max Rieser,* Language of Poetic and of Scientific Thought; *Monroe C. Beardsley,* Mr. Burnham on the "Élite". 17: *Arthur Pap,* On the Meaning of Necessity.

PHILOSOPHY AND PHENOMENOLOGICAL RESEARCH III 4: *Roy Wood Sellars,* Dewey on Materialism; *Michael Landmann,* Nicolai Hartmann and Phenomenology; *V. J. McGill,* Types of Men and Their Relation to Ethics; *Aron Gurwitsch,* William James' Theory of the "Transitive Parts" of the Stream of Consciousness; *James Feibleman,* How to Read a Word.

THE JOURNAL OF SYMBOLIC LOGIC VIII 2: *Shianhaw Wang,* A system of completely independent axioms for the sequence of natural numbers.

PHILOSOPHY OF SCIENCE X 3: *David L. Miller,* Basic Decisions in Science; *Gustav E. Miller,* On Being and Becoming; *Gustav Bergmann,* Notes on Identity; *Harold R. Smart,* Cassirer versus Russell; *Edgar J. Witzemann,* The Role of Catalysis in Biological Causation; *Y. H. Krikorian,* Life, Mechanism and Purpose; *Robert K. Nabours,* The Masquerade of ESP; *Gustav Ichheiser,* Why Psychologists Tend to Overlook Certain "Obvious" Facts; *H. G. Schrickel,* Philosophy of Science and Social Philosophy.

THE REVIEW OF POLITICS V 3: *Thomas T. McAvoy,* Americanism and Frontier Catholicism; *Francis G. Wilson,* On Jeffersonian Tradition; *Oscar Halecki,* Polish-Russian Relations—Past and Present; *Barbara Barclay Carter,* Dante's Political Ideas; *Helen Iswolsky,* The Twilight of Russian Culture; *John U. Nef,* Péguy and the Spirit of France

THE HIBBERT JOURNAL XLI 4: *G. N. M. Tyrrell,* The Natural and the Supernatural; *Reginald F. Rynd,* Religious Autonomy and Revelation; *Erich Meissner,* Where Today Is the Living Centre of the Church? A Study of the Reformation in Relation to the Present Conflict; *George Harrison,* Les Amitiés Spirituelles. A Contemporary Religious Movement in France; *G. F. Barbour,* Security as a Personal and Social Ideal; *Eleanor Silsby,* Psychology in Bondage. A Teacher's Plea for Deepening and Expansion; *T. J. Haarhoff,* The Meaning of Life; *James A. Walker,* Maude Petre (1863-1942). A Memorial Tribute; *H. H. Farmer,* The Notion of Desert Bad and Good; *Ethel M. Rowell,* Interplay of Past and Present; *M. Chaning-Pearce,*

"Repetition". A Kierkegaard Study; *David Thomson,* Political Thought in Time of War; *S. H. Mellone,* Survey of Recent Philosophical and Theological Literature.

THE THOMIST VI 2: *Edward J. Lintz,* The Unity in the Universe, According to Alfred N. Whitehead; *John A. Oesterle,* The Problem of Meaning; *Ilse Forest,* The Meaning of Faith; *Mortimer J. Adler* and *Walter Farrell,* The Theory of Democracy—Part IV (*Continued*).

FRANCISCAN STUDIES XXIV 2: *Brendan Wolf,* American Catholics and Sociology; *James Van der Veldt,* The Evolution and Classification of Philosophical Life Theories; *J. B. Carol,* Our Lady's Part in the Redemption According to Seventeenth-Century Writers; *Patrick Robert,* St. Bonaventure, Defender of Christian Wisdom; *John M. Lenhart,* The Capuchin Prefecture of New England (1630-1656).

THE NEW SCHOLASTICISM XVII 3: *F. James Van der Veldt,* The Recognition of Individual Bodies; *John A. Creaveny,* Person and Individual; *James Collins,* Kant's Opus Postumum.

ANGLICAN THEOLOGICAL REVIEW XXV 3: *John C. Bennett,* William Temple; *Amos N. Wilder,* Don Quixote in the American Scene; *C. C. McCown,* Aramaic and Greek Gospels; *E. R. Hardy, Jr.,* Our Place in the Great Church (Church Congress Syllabus VIII: "The Anglican Tradition", Part 1); *Richard M. Honig,* The Nicene Faith and the Legislation of the Early Byzantine Emperors; *Charles W. Lowry, Jr.,* "Human Destiny".

THE HARVARD THEOLOGICAL REVIEW XXXVI 3: *W. Telfer,* The Codex Verona LX (58); *H. J. Rose,* The Grief of Persephone.

SPECULUM XVIII 2: *E. H. Wilkins,* The Coronation of Petrarch; *C. W. Jones,* A Legend of St. Pachomius; *Gaines Post,* Roman Law and Early Representation in Spain and Italy; *Margery Bassett,* Newgate Prison in the Middle Ages; *Marcel Françon,* Ausonius's Riddle of the Number Three; *Elaine C. Southward,* Arthur's Dream.

THE AMERICAN JOURNAL OF PSYCHOLOGY LVI 3: *D. W. Taylor,* The Learning of Radiotelegraphic Code; *M. Bentley,* Where Does Thinking Come In?; *H. L. Valentiner,* The Effect of Vitamin B Complex on the Fatigability of Mentally Deficient Children; *C. Berger, R. A. McFarland, M. H. Halperin,* and *J. I. Niven,* The Effect of Anoxia on Visual Resolving Power; *L. A. Hellmer,* The Effect of Temperature on the Behavior of the White Rat; *R. L. Solomon,* Latency of Response as a Measure of Learning in a 'Single-Door' Discrimination; *E. Jacobson,* 'Tonus' in Striated Muscle; *M. Keller,* Mediated Generalization: The Generalization of a Conditioned Galvanic Skin Response Established to a Pictured Object.

PSYCHOLOGICAL REVIEW XL 4: *H. W. Wright,* The Three Contexts of Human Behavior; *A. H. Maslow,* A Theory of Human Motivation; *Dorothy Rethlingshafer,* Experimental Evidence for Functional Autonomy of Motives; *Harold Grier McCurdy,* Some Remarks on the Place of the Individual in Social Psychology; *Edward S. Bordin,* Factor Analysis in Experimental Designs in Clinical and Social Psychology; *J. M. Stephens,* Is Habit Formation Always Mediated by Cognition-Formation?; *Ralph K. White,* A Correction to 'The Case for the Tolman-Lewin Interpretation of Learning'; *Norman Fenton,* Lillien Jane Martin.

NOV 17 1943

Vol. LII. 6 Whole No. 312

THE PHILOSOPHICAL REVIEW

EDITED BY
THE FACULTY OF
THE SAGE SCHOOL OF PHILOSOPHY
CORNELL UNIVERSITY

WITH THE CO-OPERATION OF

ETIENNE GILSON (Paris)
A. E. TAYLOR (Edinburgh)

November, 1943

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II. Ethical Objectivity through Science ..... HORACE S. FRIES

III. Definition and Its Problems ..... HOMER H. DUBS

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PUBLISHED EVERY TWO MONTHS
FOR
LONGMANS, GREEN, AND COMPANY

SINGLE NUMBERS $1.00 PER ANNUM $5.00

THE PHILOSOPHICAL REVIEW

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Current Philosophical Periodicals.

Articles intended for publication, books for review, exchanges, and all correspondence in reference thereto, should be addressed to The Editor, **The Philosophical Review, Cornell University, Ithaca, N.Y.**

The articles in this *Review* are indexed in the *International Index to Periodicals*, New York, N.Y.

Longmans, Green, and Co.
55 Fifth Ave., New York 3

Entered as second-class matter at the postoffice at Menasha, Wisconsin, July 8, 1933, under the act of March 3, 1879, embodied in section 520, P. L. and R.

The Rich Heritage of the Creative Spirit

GREEK LITERATURE IN TRANSLATION

Edited by WHITNEY J. OATES and CHARLES T. MURPHY

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